



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: 113/2017-18 /CSC/NISE

Dated: 25-08-17

To, M/S - KISAN SOLAR  
AR, Atulya Bhawan, Near C.E.R.C.,  
S.G Highway, Thaltej, Ahmedabad - 380054

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

Dear Sir,

Please refer to your letter No./Order Form No. 05 Dated 01-06-17. In this connection, I am directed to enclose herewith the Test Report No : 202/2017/WP/NISE Dated 24-08-2017. 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, failing 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 60 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

Shuchi  
25/08/2017  
(In-charge, Customer Service Cell)  
(National Institute of Solar Energy)

Encl:

1. Test Report-Total Page 05
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)

Gurgaon-Faridabad Road, Gwalpahari, Gurgon-122003

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**2017-2018**

**TEST REPORT**

**ON**

**PV WATER PUMPING SYSTEM**

**(Testing Model: As per User's Specifications)**

Sample Number: 202/2017/WP  
 Manufactured by:  
 Pump System: M/s KSB Pumps Ltd.  
 PV Array : M/s Kosol Hiramrut Energies Pvt. Ltd.  
 Controller: M/s Kisan Solar  
 Submitted by: M/s Kisan Solar  
 A/2, Atulya Bhavan, Near C.E.R.C., S.G. Highway,  
 Thaltej, Ahmedabad-380054

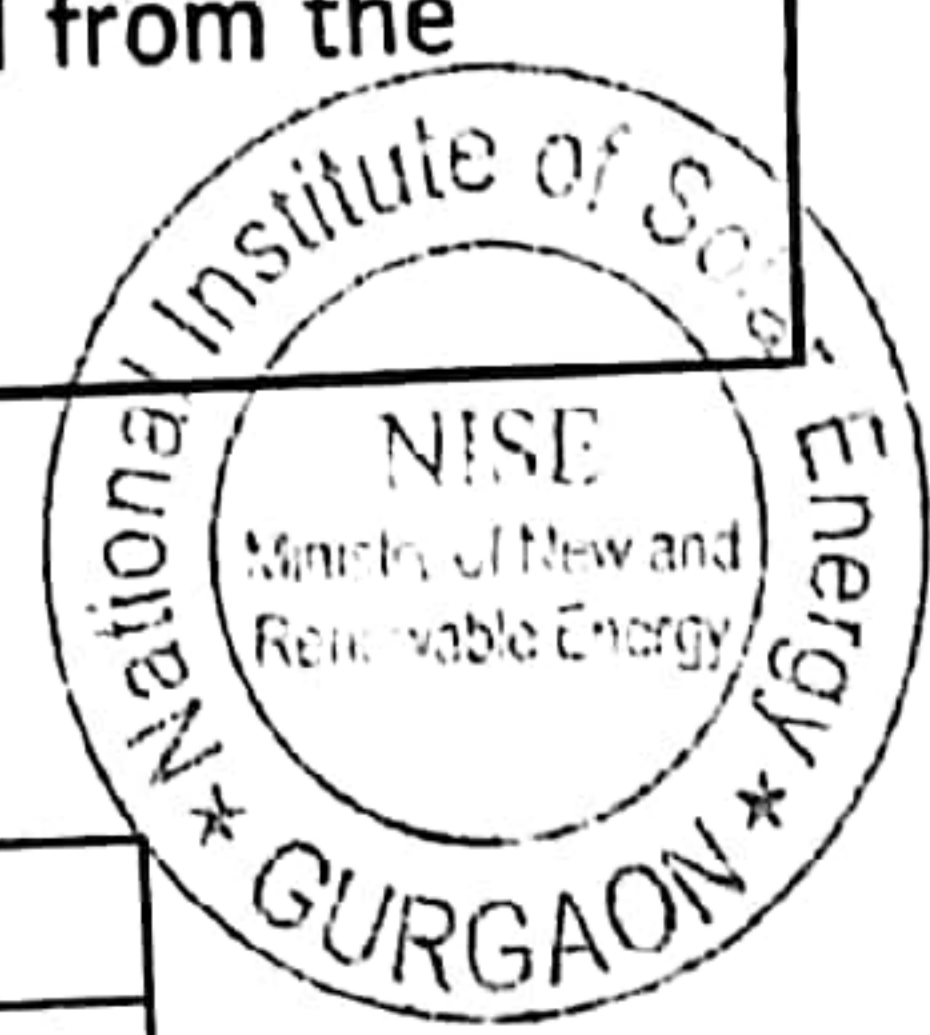
**NOTE**

This is a report on measurements carried out on SPV WATER PUMPING SYSTEM (sample number 202/2017/WP/NISE submitted to National Institute of Solar Energy as per User's specifications. The data reported in this TEST REPORT are valid at the time of and under the stipulated conditions of measurement and the test results are applicable to those items of product which have been tested and do not apply to other products even though declared to be identical. The data contents in this report do not constitute a qualification certificate under any set of specifications. NISE does not accept any liability for any consequences including commercial or otherwise arising out of the utilization of the information contained in this report.

The Test Report, if reproduced for any purpose, commercial or otherwise, should be reproduced in full. The contents of the report can be published only after a written approval from the Director General, NISE. This report consists of 4 pages & annexure (of 24 pages).

*KSB* *Renu*

*Rajesh Kumar*  
*25/08/2017*



Test Report No.	Date of Issue	Total No. of pages	Page No.
202/2017/WP/NISE	24/08/2017	4	1

# National Institute of Solar Energy

## PV WATER PUMPING SYSTEM

(Testing Model: As per User's Specifications)

SPV Water Pump System Submitted By: M/s Kisan Solar

A/2, Atulya Bhavan, Near C.E.R.C., S.G. Highway,  
Thaltej, Ahmedabad-380054

S.No.	Test Description	Observations	Remarks
<b>1</b>	<b>PV Module/ Array</b>		
1.1	Array Capacity at STC	7267 Wp	Detail on Page No. 4
1.2	Certification of PV Modules	Provided	Tested by UL India Pvt. Ltd. vide certificate no. ULI-NABL(ELT)-MNRE-0057/2013 valid till 02-05-2018
1.3	Type of modules	Multi Crystalline Silicon modules. Manufactured by M/s Kosol Hiramrut Energies Pvt. Ltd.	Model No. of PV Module is unknown.
1.4	Peak power output of SPV module under STC.	Nominal module wattage 300 Wp.	Mismatch in modules wattage= 1.63 %
1.5	Module Efficiency	Comply	
1.6	Fill Factor	Comply	
<b>2.</b>	<b>Motor &amp; Pump Details</b>		
2.1	Make, model & Serial No.	M/s KSB Pump Ltd. , Model: UQD 152/17, Pump Sr. no. 11419148012, Motor Model: UMA/150/-6/22, Sr. No. 11390228010, Controller: M/s Kisan Solar, Model: IACQUA-400-75, Sr. No. 0616-0075-000508, 7.5 HP	
2.2	Type of pump	Deep well pump	
2.3	Operation	AC	
<b>3.</b>	<b>Electronics and Protections</b>		
3.1	IP 54 Protection	Required	Provided Tested at M/s Karandikar Laboratories Pvt. Ltd., Bolar vide report no. KLPL/BTG/17/03-55 dated 03.04.2017
3.2	Remote Monitoring Facility	The following parameters need to be provided: 1. Daily water output 2. Power generated by the PV array 3. Up time of the pump during the year 4. No. of days the pump was unused or under breakdown/repairs	Provided Adequate



Tested by: *[Signature]*

Prepared by: *[Signature]*

Approved by: *[Signature]*

Issued by: *[Signature]*

Test Report No.	Date of Issue	Total No. of pages	Page No.
202/2017/WP/NISE	24/08/2017	4	2

# National Institute of Solar Energy

## PV WATER PUMPING SYSTEM

(Testing Model: As per User's Specifications)

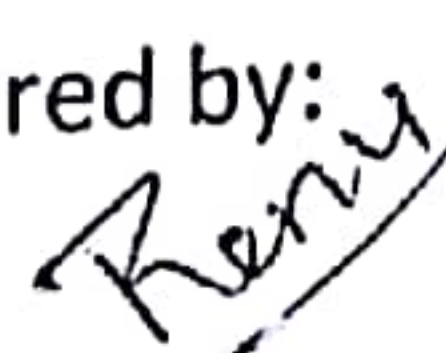
SPV Water Pump System Submitted By: M/s Kisan Solar

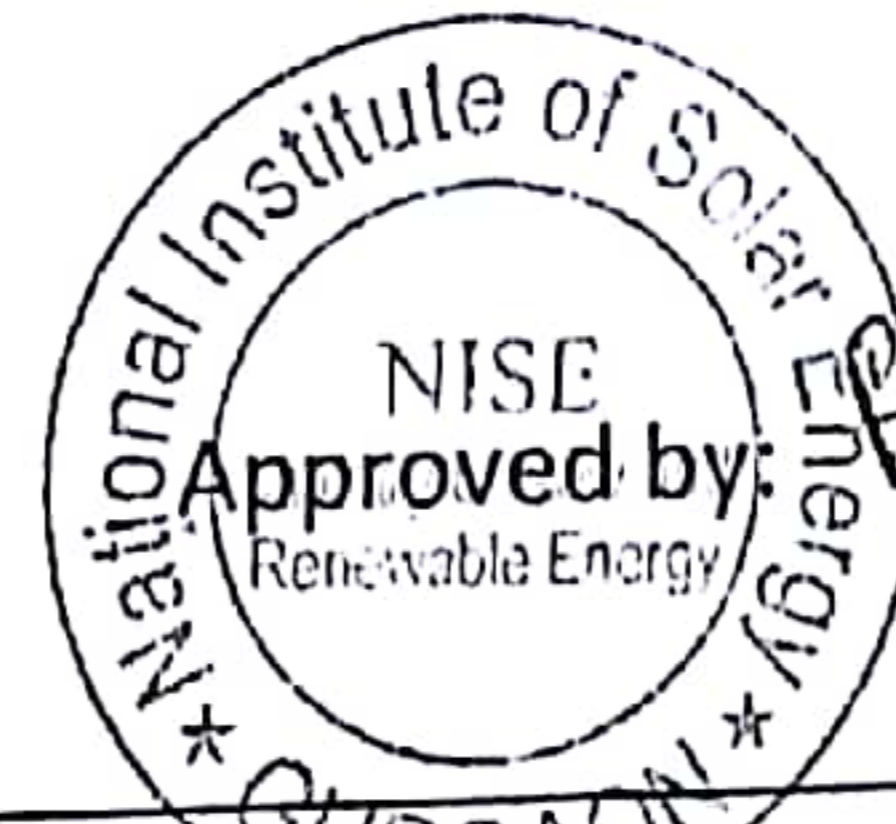
A/2, Atulya Bhavan, Near C.E.R.C., S.G. Highway,  
Thaltej, Ahmedabad-380054

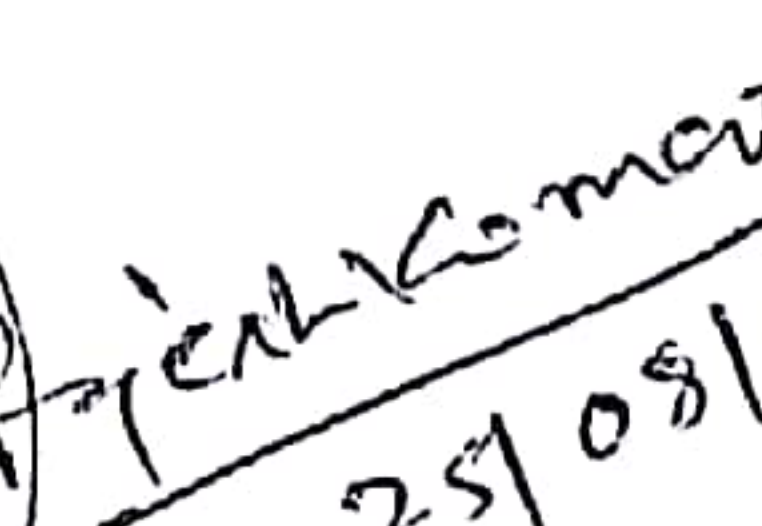
S.No.	Test Description	Observations	Remarks
4	Testing of complete SPV pump		
4.1	Output of water per day/per watt at Irradiation of 7.15 Kwh/sq.m. at a total head of 100 meters in summer profile	8.1 liters	
4.2	Average Output of water per day at Irradiation of 7.15 Kwh/sq.m. at a total head of 100 meters in summer profile	59,159 liters	
4.3	Output of water per day/per watt at Irradiation of 7.15 Kwh/sq.m. at a total head of 100 meters in winter profile	10.7 liters	
4.4	Average Output of water per day at Irradiation of 7.15 Kwh/sq.m. at a total head of 100 meters in winter profile	78,371 liters	
4.5	Max. total dynamic head	150 meters	
5	Tracking system	Manual 3 times a day	
6	Protections (Controller)		
6.1	Against dry running	Provided	
6.2	Against open circuit and short-circuit	Provided	
6.3	Against reverse polarity	Provided	
7	Others		
7.1	Design of PV array	Modular	
7.2	DC/AC switch	Provided	
7.3	Connection cable	Provided	

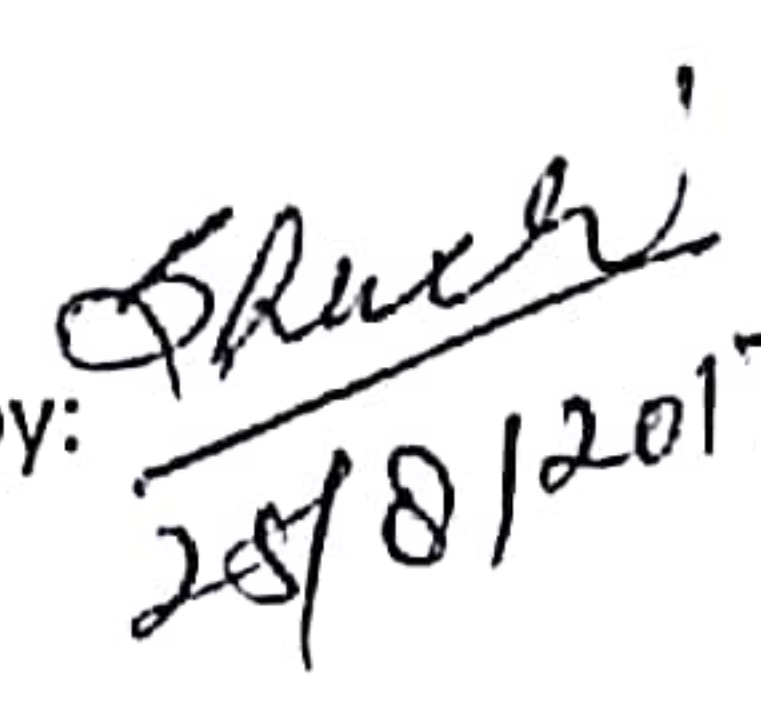
**Comments** The Water pumping System sample was tested at NISE with total head of 100 meters, the radiation data was measured on the array surface from dawn to dusk, and was extrapolated for 7.15 KWh/sq.m. *The SPV water pumping system has been tested as per customer's request, i.e. only for summer and winter profiles. This system must also be tested in realistic conditions before its installation in field. However the model of the PV array is not provided inside the glass. Model No. of module must be in front side under the glass.*

Tested by: 

Prepared by: 



  
25/08/2017

Issued by: 

25/8/2017

Test Report No.	Date of Issue	Total No. of pages	Page No.
193/2017/WP/NISE	23/08/2017	4	3

# National Institute of Solar Energy

## PV WATER PUMPING SYSTEM

(Testing Model: As per User's Specifications)

SPV Water Pump System Submitted By: M/s Kisan Solar

A/2, Atulya Bhavan, Near C.E.R.C., S.G. Highway,  
Thaltej, Ahmedabad-380054

Peak Wattages of Individual PV Modules tested at National Institute of Solar Energy, Gurgaon vide report no. 184/292/NISE/2016-17 dated 04/01/2017 and 218/343/NISE/2016-17 dated 19/02/2017

Model: UNKNOWN

S.NO.	Voc(V)	Isc(A)	V <sub>max</sub> (V)	I <sub>max</sub> (A)	P <sub>max</sub> (W)	F.F	M. EFF. (%)
KE3151841601986	45.58	8.94	36.17	8.33	301	0.740	15.6
KE3151841601949	45.36	8.82	36.18	8.28	300	0.749	15.5
KE3151841601942	45.54	8.86	36.24	8.29	300	0.744	15.5
KE3151841601950	45.58	8.88	36.22	8.29	300	0.742	15.5
KE3151841601937	45.43	8.92	36.09	8.31	300	0.740	15.5
KE3151841601951	45.62	9.01	36.41	8.36	305	0.741	15.7
KE3151841601895	45.65	9.08	36.36	8.35	304	0.732	15.7
KE3151841601893	45.47	8.93	36.17	8.32	301	0.741	15.5
KE3151841601956	45.64	8.93	36.27	8.27	300	0.736	15.5
KE3151841601923	45.83	8.97	36.46	8.34	304	0.740	15.7
KE3151841601920	45.39	8.94	36.11	8.30	300	0.738	15.5
KE3151841601941	45.52	8.96	36.23	8.31	301	0.738	15.5
KE3151841601906	45.54	8.96	36.35	8.33	303	0.743	15.6
KE3151841601947	45.61	8.98	36.44	8.35	304	0.743	15.7
KE3151841601925	45.40	8.98	36.09	8.35	301	0.739	15.5
KE3151841601915	45.41	8.86	36.26	8.28	300	0.746	15.5
KE3151841601924	45.27	8.96	35.97	8.36	301	0.741	15.5
KE3151841601940	45.51	8.97	36.21	8.34	302	0.740	15.6
KE3151841601916	45.96	8.92	36.64	8.31	305	0.743	15.7
KE3150011700087	45.88	8.87	36.59	8.36	307	0.753	15.7
KE3150011700075	46.00	9.02	36.70	8.45	310	0.748	15.9
KE3150011700081	45.83	8.92	36.48	8.40	306	0.749	15.7
KE3150011700076	45.79	9.07	36.53	8.44	308	0.743	15.8
KE3150011700069	45.76	8.77	36.36	8.37	304	0.758	15.6

Total P<sub>max</sub> = 7267 Wp

Tested by:

Prepared by:



Approved by:

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Test Report No.	Date of Issue	Total No. of pages	Page No.
202/2017/WP/NISE	24/08/2017	4	4

25/08/2017