



केन्द्रीय विद्युत अनुसंधान संस्थान

(भारत सरकार की सोसाइटी, विद्युत मंत्रालय)

प्रो सर सी. वी. रामन रोड़, सदाशिवनगर डाक घर, पो. बा. सं. 8066, बेंगलूर - 560 080

CENTRAL POWER RESEARCH INSTITUTE

(A Govt of India Society under Min. of Power)

Prof. Sir C.V. Raman Road, Sadashivanagar P.O., P.B. No. 8066, Bangalore - 560 080, India

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ENERGY EFFICIENCY AND RENEWABLE ENERGY DIVISION

Phone/Tele fax: 080-23604682 email: msb@cpri.in, ered@cpri.in

CPRI/ERED/SPV/2013

04/12/2013

To,

M/s. KOTAK URJA (P) LTD.
378, 10th Cross, 4th phase, Peenya Industrial Area,
Bangalore -58

Dear Sir,

Please find enclosed the test report for the following:

1. CFL based Solar Lantern (2A) – 1 No.
2. CFL based Solar Street lighting system – 1 No.
3. CFL based Solar Home Lighting System (M1 to M4) – 4 Nos.

Please acknowledge the receipt of the test report. Thank you for utilizing our services.

Corrections, if any, in the report may please be brought to our notice within 45 days from the date of issue of the report.

Kindly arrange to take back the equipment tested within 15 days, failing which the same will be disposed off.

Thanking you,

Yours Sincerely,


(M. Siddhartha Bhatt)
Additional Director

**CENTRAL POWER RESEARCH INSTITUTE
ENERGY EFFICIENCY AND RENEWABLE ENERGY DIVISION**



Test Report No. : CPRI/ERED/SPV/2882/2013
Sample ID No : CPRI/ERED/SPV/S2955/2013
Manufactured by : M/s. KOTAK URJA (P) LTD.
Submitted by : M/s. KOTAK URJA (P) LTD.
378, 10th Cross, 4th phase, Peenya Industrial Area,
Bangalore -58

TEST REPORT

ON

**SOLAR LANTERN -2A
2013-2014**

TEST REPORT ON SOLAR LANTERN-2A

The Industry is the manufacturer of solar PV Module and Electronics for solar lantern

Date of Test : 30/10/2013 to 18/11/2013
Issue Date : 04/12/2013

NOTE

This is a report on measurements carried out on the Solar Lantern system submitted at Central Power Research Institute as per MNRE specifications 2013-2014. 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 this system only and do not apply to other solar lantern systems even though declared to be identical. The data contents in this report do not constitute a qualification test certificate. CPRI 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 Additional Director, ERED, CPRI. This report consists of four pages.




(M. Siddhartha Bhatt)
Additional Director


Test in-charge


Test Engineer

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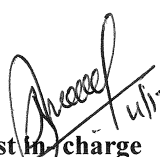
CPRI

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 # 378, 10th Cross, 4th phase, Peenya Industrial Area,
 Bangalore -58

TEST REPORT

S. N.	Test Description	MNRE Specifications	Manufacturer Claim	CPRI Observations	Remarks	
1	PV Module					
	i	a) Name of Manufacturer & Distinctive Logo	Should be available	Provided	Provided M/s. Kotak Urja (P) Ltd	
		b) Model or Type No.	Should be available	Provided	KM0010	
		c) Serial No.	Should be available	Provided	18390	
		d) Year of Make	Should be available	2013	2013	
		e) Module efficiency	Minimum 10 %	≥ 10 %	11.06 %	
	ii	Wattage of module at 16.4 V under STC conditions	Minimum 10 W	10.00 Wp	10.24 Wp	
	iii	Type of Module	Crystalline (Mono/Multi) /Thin Film	Mono Crystalline	Mono Crystalline Silicon	
iv	V _{oc} of Module	21 V	≥21.00	21.44 VDC		
2	Lamp					
	i	Make and Wattage	Should be mentioned	Osram Delux 7 W	Osram Delux 7 W	
	ii	No. of Pins	4 pin	4 pin	4 Pin	
	iii	Mounting configuration	Preferably base up	Base down	Base down	
	iv	Light output(lumen)				
		a) Prior to 1000 On/Off cycles	Not specified	375 lumens	374 lumens	
	b) After 1000 on/Off cycles	Degradation in the light output should be within 5 %.	Not provided	368 lumen		

*PV module is manufactured as per IEC 61215 standards. Vide test report No.12605477 002, dated 07/12/2009 issued by TUV Rheinland

Test in-charge

 14/12/13

Test Engineer


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CPRI

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TEST RESULT

S. N.	Test Description	MNRE Specifications	Manufacturer Claim	CPRI Observations	Remarks	
3	Battery					
	i	Make & Sl. No.	Should be Mentioned	HBL Power Systems	HBL Power Systems Sl. No. 5035156612	
	ii	Type	SMF	SMF	SMF	
	iii	Voltage	12 V	12 V	12 V	
	iv	Capacity at C/20 discharge rate	7 Ah	7 Ah	7 Ah	
v	Rated capacity percentage Between low and high voltage Cut-off.	80 %	5.7 Ah	5.69 Ah 81.28 %		
4	Electronics Sl. No. 0001					
	i	Type of Wave form.	Sine/Quasi Sine Wave	Quasi sine Wave	Quasi Sine Wave	
	ii	Frequency	20-35 KHz	26 to 30 KHz	28.39 KHz	
	iii	Crest Factor	<1.7	<1.7	1.64	
	iv	Efficiency	85 %	88.00 %	85.86 %	
	v	Idle Current	<1 mA	0.56 mA	0.68 mA	
	vi	PCB installation	Solder Free	Solder free	Solder Free	
	vii	Voltage drop between the module and battery terminal	< 0.6 V	0.5 VDC	0.54 VDC	
	viii	Temperature Compensation	Should be provided	Provided	Provided	

[Signature]
 Test in-charge
 11/12/13

[Signature]
 Test Engineer

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TEST RESULTS

S.N	Test Description	MNRE Specifications	Manufacturer Claim	CPRI Observations	Remarks
5	Protections				
	i	No Load protection	Should be provided	Provided	Provided
	ii	Low voltage cut off	Should be provided	Provided	11.12 VDC
	iii	Load reconnect	Should be provided	Provided	12.30 VDC
	iv	High Voltage cut off	Should be provided	Provided	14.28 VDC
	v	Short Circuit protection	Should be provided	Provided	Provided
	vi	Reverse Polarity	Should be provided	Provided	Provided
6	Other features				
	i	Duty cycle	Required to qualify	Qualifies	Qualifies
	ii	Indicators (Two)	Should be provided	Provided	Provided
	ii	Switch & Cable	Should be provided	Provided	Provided
	iii	Undertaking from the Manufacturer in respect of product	Should be provided	Provided	Provided
iv	Photographs of Manufacturing Unit	Should be provided	Provided	Provided	
7	Warranty				
	i.	PV Module	Provided	25 Years	25 Years
	ii.	Lighting System	Provided	5 Years	5 Years
	iii.	Battery	Provided	2 years	2 years

Note: It is endorsed that the Solar Lantern (2A) Submitted by M/s. Kotak Urja (P) Ltd. qualifies the MNRE specification 2013-2014 and M/s. Kotak Urja (P) Ltd. is the Original manufacturer of solar photovoltaic module and electronics.

Test in Charge  4/12/13


Test Engineer

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