



ELECTRONICS TEST & DEVELOPMENT CENTRE

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Test Report

Test Report No.: TR/ETL/ 62432/1

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I. SCOPE:

1.	SERVICE REQUEST NUMBER	TR/ETL/ 62432
2.	Test requested by (Name of Organisation)	M/s. GK Energy Marketers Pvt. Ltd., Lokmanya Nagar, Pune – 411030.
3.	Test Carried out at	M/s. ETDC, Bangalore
4.	Description of the Equipment	
	a) Nomenclature	CFL Based Solar Home Lighting System - Model II
	b) Manufactured by	M/s. GK Energy Marketers Pvt. Ltd.,
	c) Model No / Type No	GRE 08 + Home Light Luminary (2 Nos)
	d) No. of samples submitted	01 Set (1-CC, 1 Battery of 40 Ah, 2 Luminaire 11W, SPV panel 40W)
	e) Serial No.	052012-2, CHL/33/8/13, CHL/34/8/13
5.	Date of submission of samples	22/08/2013
6.	Condition of items on receipt	Good
7.	Date of completion of tests	06/09/2013
8.	Applicable Test Specification	As per Model II of MNRE specifications for CFL Based Solar Photovoltaic Lighting Systems - 2013-2014.
9.	Test Category	Performance Test
10.	Env. Condition during measurements	Temp : 23-27 °c humidity: 40-70 %

II MAJOR EQUIPMENT USED:

Sl. No	Nomenclature	Make	Model	Cal. Due
1.	DMM	Agilent	34401A	Dec 2013
2.	Power Analyzer	Voitech	PM6000	Aug 2014
3.	LUX meter	Lutron	LX 101	Jun 2014
4.	Digital Storage Oscilloscope	Tek	2012	Dec 2013

THIS REPORT REFERS ONLY TO THE ITEMS TESTED AND SHALL NOT BE REPRODUCED EXCEPT IN FULL. REFER TO INFORMATION CONTAINED ON THE COVER.



TR/ETL/001

2.0 Test Details & Test Results..

Test No.	Test parameter / Condition	Requirement	Measured Value / Observation / Remarks
1.0	PV MODULE		
	Type of module	Mono or poly crystalline Silicon	Crystalline silicon terrestrial PV module
	Manufacturer		M/s. Kotak Ujra Pvt. Ltd.,
	SL. No.	Shall be engraved on the frame of the module or screen printed on the tedlar sheet of the module.	21361 Provided.
	Module configuration	1 X 37 W module.	1 x 40 W
	Peak power at 16.4 V	37 W	40.75 W
	Test certificate 1. In case of crystalline silicon solar cell module 2. Thin film solar cell module	as per IEC 61215 specifications or equivalent National or International/ Standards As per IEC 61646 specifications or equivalent National or International Standards.	Crystalline silicon terrestrial photovoltaic module - Vide test report No. 12605477 001 of Registration number PV 50169594 dated 07 Dec 2009 Issued by TUV Rhineland, Japan. -----
	Open circuit voltage under STC	Should be at least 21.0 volts.	22.36 V
2.0	LAMP		
	Make		M/s. Osram
	Power	1 x 9W/11W CFL	11 W - 2Nos.
	No. of Pins	2 or 4 pins	4 pins
	Light output		
	(a) Prior to 1000 on/off cycles	900 \pm 5% lumen (for 11 W)	955 Lumen
	(b) After 1000 on/off cycles	Less than \pm 10% of measured value (a)	930 Lumen
3.0	BATTERY		
	Make		M/s. Base Corporation
	Type of battery	Lead acid tubular /VRLA	Tubular Battery
	Rated Capacity at C/10 discharge rate (12V)	40 Ah	45.20 Ah
	% of rated capacity between battery high and low	75 %	Confirms vide test report No. 073EATDBT12S0002 dated 07/02/2012 issued by CPRI, Bangalore

Tested By... Approved By... 

2.0 Test Details & Test Results:

Test No.	Test parameter / Condition	Requirement	Measured Value / Observation / Remarks
4.0	ELECTRONICS: Verified on Inv. Sl. No. CHL/33/8/13		
	Wave form type	Sine / Quasi Sine wave	Quasi Sine Wave
	Crest factor	Less than 1.7	1.63
	Frequency	20-30 kHz	21.9 kHz
	Efficiency	>85 %	88.40 %
5.0	PROTECTION		
	No load protection	Required	Provided
	Short circuit	Required	Provided
	Reverse polarity	Required	Provided
	Reverse flow protection (blocking diode)	Required	Provided
	Battery temperature compensation	Required	Provided
	Idle Current	Less than 2 mA	1.6 mA
	Battery protection		
	Low voltage cut off	Required	Provided
	Load reconnect	Required	Provided
	Over charge cut off	Required	Provided
	Module reconnect	Required	Provided
6.0	OTHER FEATURES		
	Duty cycle	Required to qualify	Qualifies
	Indicators	Required	Provided on CC.
	Switch and cable	Required	Provided
	Marking on lighting system	Required	Provided
	Marking on modules	Required	Provided
	Manual	Required	Provided
7.0	WARRANTY		
	(a) Module		
	- With peak watt capacity >90%	10 years	Provided
	- With peak watt capacity >80%	25 years	
	(b) Home lighting system	5 years	Provided

CC= Charge Controller

Tested By: Approved By: 

2.0 Test Details & Test Results:

Test No.	Test parameter / Condition	Requirement	Measured Value / Observation / Remarks
8.0	INDICATORS		
	1 no. Green LED to indicate the charging under progress and should glow only when charging is taking place. Stop glowing on battery fully charged.	Shall be provided	Provided
	1 no. red LED should indicate battery load cut off condition.	Shall be provided	Provided

Note: The manufacturer has given an undertaking that the company is original manufacturer of electronics. Based on the undertaking & testing conducted at ETDC the CFL based solar Home lighting system **qualifies** the MNRE specification.

Tested By: Approved By:  11-09-2013Issued By:  11/9/13

**CO-ORDINATOR
TESTING SERVICES,
E.T.D.C., BANGALORE**

