

PERFORMANCE EVALUATION OF 30 kVA ENERGY SAVER

Manufactured by:
JHAVERILABS, MUMBAI

Installed at: JHAVERILABS, MUMBAI

REPORT NO.: CPRI/ERED/ES/01/2015
(Work order No. Nil dated 02/01/2015)




FEBRUARY-2015

Study conducted by

CENTRAL POWER RESEARCH INSTITUTE
(A Govt. of India Society)
ENERGY EFFICIENCY AND RENEWABLE ENERGY DIVISION
P. B. No. : 8066, Prof. Sir.C.V. Raman Road
Sadashivanagar Sub. P.O. BANGALORE - 560 080.

PERFORMANCE EVALUATION OF 30 kVA ENERGY SAVER

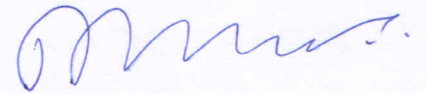
Sl. No.	Particulars	Details
01	Test report no.	CPRI/ERED/ES/01/2015
02	Date	02/03/2015
03	Client's address	M/s. Jhaverilabs Anand Udyog Co-Op Society Ltd. Agarwal Estate, 168, CST Road, Kalina, Santacruz (e), Mumbai – 400 098
04	Reference	Nil, Dated 02/01/2015
05	Manufacturer address	M/s. Jhaverilabs Anand Udyog Co-Op Society Ltd. Agarwal Estate, 168, CST Road, Kalina, Santacruz (e), Mumbai – 400 098
06	Reference	--
07	Sample tested	30 KVA Energy saver
08	Place of installation	At manufacturer premises
09	Identification no.	3P4002-14-15
10	Model	Power Easy 30 kVA
11	Serial No.	3P4002-14-15
12	Date (s) of the test	04/02/2015 to 06/02/2015
13	No. of samples tested	One
14	Test in accordance with standards/specifications	Performance evaluation of Energy Saving System: As per manufacturer specification
15	Client's requirement	Finding energy saving with lighting load and complex load
16	Deviation (if any)	Nil
17	Name of the witnessing persons	Shri. Lakshmikanta Mahapatra
18	Clients representative	Nil
19	Other than clients representative	Nil
20	No. of pages (including this page)	Twenty Nine
21	No. of oscillograms	Nil
22	No. of drawings	Nil
23	No. of graphs	Eight
24	No. of photos	Nil



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NOTE:

- a) This is not a certificate of compliance.
- b) These test results relate only to the items tested, which are selected and submitted by the client mentioned above.
- c) The data reported in this test report are valid at the time of and under the stipulated conditions of measurements.
- d) Publications or reproduction of this report in any form other than by complete set of the whole report and in the language written is not permitted without consent of CPRI.
- e) Correction/erasing invalidate the test report.



(M. Siddhartha Bhatt)
Additional Director



EXECUTIVE SUMMARY

PERFORMANCE REPORT OF ENERGY SAVER (POWER EASY)

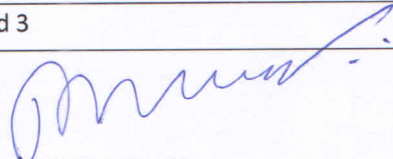
SL No.	PARTICULARS	DETAILS
01	Title	Performance evaluation of Energy saver (Power Easy)
02	Name and address of the client	M/s. Jhaverilabs, Mumbai
03	Name of the person witnessing the test	Shri. Lakshmikanta Mahapatra M/s. Jhaverilabs, Mumbai
04	Location of study & test conducted	Premises of M/s. Jhaverilabs, Mumbai
05	Date and time of test	Lighting Load: 04/02/2015: 14.00 Hrs. to 15.55 Hrs. – bypass mode 04/02/2015: 16.00 Hrs. to 17.55 Hrs. – Power Easy Mode Complex Load: 05/02/2015: 11.00 Hrs. to 12.59 Hrs. – bypass mode 05/02/2015: 13.01 Hrs. to 15.00 Hrs. – Power Easy Mode
06	Energy Saver details	i). Make: M/s. Jhaverilabs, Mumbai. ii). Capacity – 30 kVA – AC - 3 Phase 4 wire system iii). Model : Power Easy iv). Sl. No. - 3P4002-14-15
07	Particulars of study & test conducted	i). Power measurement without Energy saver (by-pass mode) ii). Power measurement with Energy saver (Power easy mode). iii). Computation of energy saving
08	Meters used	Power analyzer: Make: Krykard Sl. No. 210844 (ALM 35), 296075 (ALM30) Calibration Valid Up to: 20/06/2015
09	Load connected	Refer Table -1
10	Results Obtained	Refer Table – 2 and 3
11	Signature of the Divisional Head	 M. Siddhartha Bhatt (Additional Director, ERED)



TABLE -1: DETAILS OF THE LOAD USED FOR THE STUDY

Sl. No.	Particulars	Capacity	Quantity	Total Capacity
01	Load Used: Lighting load (tube Lights)	36 W	100 Nos	3.6 kW
02	LoadS Used: Complex load (tube Lights) Inductive load (fans) Air conditioner Heater Load Computer	36 W 250 W 2.0 Ton 1.5 Ton 1.0 Ton 1.5 kW 0.4 kW	100 Nos. 10 Nos. 1 No. 1 No. 1 No. 1 No. 7 Nos.	(rated capacity) 3.6 kW 2.5 kW 2.4 kW 1.8 kW 1.2 kW 1.5 kW 2.8 kW

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**TABLE-2: COMPARATIVE STATEMENT OF ENERGY CONSUMPTION
NORMAL VS ENERGY SAVER**

Lighting Load (36 X 100 Nos. of tube Lights)

<i>Sl. No.</i>	<i>Particulars</i>	<i>Without Energy Saver</i>	<i>With Energy Saver</i>
1	Starting date	04/02/2015	04/02/2015
2	Finishing date	04/02/2015	04/02/2015
3	Initial energy meter reading (kWh)	0.16	19.29
4	Final energy meter reading (kWh)	18.64	34.18
5	Starting time	14.00 Hrs	16.00 Hrs
7	Finishing time	15.55 Hrs	17.55 Hrs
8	Energy consumption (kWh)	18.48	14.89
9	Load on duration	1 h 56 min.	1 h 56 min.
	Average consumption per hour (kWh)	9.57	7.71
10	Change in energy consumption in auto-mode	--	19.42 % (reduction)
<i>Measured details are provided in Annexure - Table -1 to 2 and figure 1 to 4</i>			

**TABLE-3: COMPARATIVE STATEMENT OF ENERGY CONSUMPTION
NORMAL VS ENERGY SAVER**

Complex load (Light, Fan, AC etc.)

<i>Sl. No.</i>	<i>Particulars</i>	<i>Without Energy Saver</i>	<i>With Energy Saver</i>
1	Starting date	05/02/2015	05/02/2015
2	Finishing date	05/02/2015	05/02/2015
3	Initial energy meter reading (kWh)	0.25	33.04
4	Final energy meter reading (kWh)	32.54	59.51
5	Starting time	11.00 Hrs	13.01 Hrs
7	Finishing time	12.59 Hrs	15.00 Hrs
8	Energy consumption (kWh)	32.29	26.47
9	Load on duration	2 h 00 min.	2 h 00 min.
10	Average consumption per hour (kWh)	16.14	13.23
11	Change in energy consumption in auto-mode	--	18.02 % (reduction)
<i>Measured details are provided in Annexure Table -3 to 4 and figure 5 to 8</i>			


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CONCLUSION

The Energy saver was installed in the building of M/s. Jhaverilabs and the power consumption monitored without the Energy Saver (Power Easy) and with the Energy saver. The evaluation study has been conducted using lighting load and complex load. The results obtained are as follows:

1. The reduction in energy observed by using Power Easy for lighting load (Tube lights) is 19.42 %.
2. The reduction in energy observed by using Power Easy for complex load (Tube lights, Fan, AC , heater load and computers) is 18.02 %.



Figure 8 : Measured power during bypass mode and energy saving (Power easy) mode with complex load

