Prüfbericht - Nr.: *Test Report No.:*	**19630550 001**		**Seite 1 von 10** *Page 1 of 10*
Auftraggeber: *Client:*	**Solar Idea Pvt. Ltd.** 8-2-277/A/7, Plot No.126, Road No.2, Banjara Hills, Hyderabad – 500034, Telangana, India		
Gegenstand der Prüfung: *Test item:*	Classic Solar Power Conditioning Unit with inbuilt MPPT charge Controller		
Bezeichnung: *Identification:*	10KVA	**Serien-Nr.:** *Serial No.:*	11608001931
Wareneingangs-Nr.: *Receipt No.:*	1803119805	**Eingangsdatum:** *Date of receipt:*	2016.01.28
Prüfort: *Testing location:*	**TÜV Rheinland (India) Pvt. Ltd.** Plot No.17B, Electronic City Phase II Industrial Area, Hosur Road Bangalore - 560 100, Karnataka, India		
Prüfgrundlage: *Test specification:*	IEC 60068-2-30, IEC 60068-2-14, IEC 60068-2-1, IEC 60068-2-2 (As per MNRE / customer requirement).		
Prüfergebnis: *Test Result:*	Refer section " Summary of testing"		
Prüflaboratorium: *Testing Laboratory:*	**TÜV Rheinland (India) Pvt. Ltd.** Plot No.17B, Electronic City Phase II Industrial Area, Hosur Road Bangalore - 560 100, Karnataka, India		

geprüft/*tested by:*			**kontrolliert**/*reviewed by:*		
2016.02.15	Manjunath.K / Sr. Engineer		2016.02.15	Kamalaksha C.S / Sr. Manager	
Datum *Date*	**Name/Stellung** *Name/Position*	**Unterschrift** *Signature*	**Datum** *Date*	**Name/Stellung** *Name/Position*	**Unterschrift** *Signature*

Sonstiges/*Other Aspects:*

This report consists of 10 pages including the following attachments:
Attachment 1: Photo Document

Abkürzungen:	***P(ass)***	=	***entspricht Prüfgrundlage***	***Abbreviations:***	***P(ass)***	=	***passed***
F(ail)	=		***entspricht nicht Prüfgrundlage***	***F(ail)***	=		***failed***
N/A	=		***nicht anwendbar***	***N/A***	=		***not applicable***
N/T	=		***nicht getestet***	***N/T***	=		***not tested***

TEST REPORT

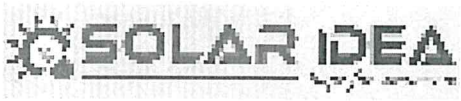
ENVIRONMENTAL TESTING

Report reference No ..... :	19630550 001
Tested by (printed name and signature) ..... :	(see cover page) .....
Approved by (printed name and signature) ..... :	(see cover page) .....
Date of issue. ..... :	(see cover page)
Testing Laboratory Name ..... :	TÜV Rheinland (India) Pvt. Ltd.
Address ..... :	Plot No.17B, Electronic City Phase II Industrial Area, Hosur Road Bangalore - 560 100, Karnataka, India
Applicant's Name ..... :	Solar Idea Pvt. Ltd.
Address ..... :	8-2-277/A/7, Plot No.126, Road No.2, Banjara Hills, Hyderabad – 500034, Telangana, India
Test specification ..... :	
Standard ..... :	IEC 60068-2-30, IEC 60068-2-14, IEC 60068-2-1, IEC 60068-2-2 (As per MNRE / customer requirement).
Test procedure ..... :	QMA 36.201.01
Non-standard test method ..... :	N/A
Test Report Form No. ..... :	TUVR_ENV_R2
TRF originator ..... :	TUVR
Master TRF ..... :	2009.08.20

Test item description ..... :	Classic Solar Power Conditioning Unit with inbuilt MPPT charge Controller	
Manufacturer ..... :	Solar Idea Pvt. Ltd.	
Model and/or type reference ..... :	10KVA	
Serial number ..... :	11608001931	
Rating(s) ..... :	RATING	:10KVA/10kW
	BATTERY	:120VDC
	OUT PUT VOLTAGE	:230VAC ± 1%
	FREQUENCY	:50Hz
	AC MAINS	:160 – 300VAC
	MPPT VOLTAGE	:<500VDC
	CURRENT	:30Amps
	Manufactured Month	:Jan 2016

Environmental Testing

Copy of marking plate:



Model	: Classic Solar PCU with Inbuilt MPPT charge controller
SL.No	: 01160800193 1
RATING	: 10KVA/10KW
BATTERY	: 120V DC
OUT PUT VOLTAGE	: 230VAC ± 1%
FREQUENCY	: 50Hz
AC MAINS	: 160 - 300VAC
MPPT VOLTAGE	: <500VDC
CURRENT	: 30Amps
Manufactured Month	: Jan 2016

General product information:

EUT is a Classic Solar Power Conditioning Unit with inbuilt MPPT charge Controller.

Summary of testing:

This report covers Environmental Tests undertaken as per customer's specifications with reference to the listed standards.

EUT continues to work after each test and no physical damages were observed.

Environmental Testing

Particulars: test item vs. test requirements	
Equipment orientation	Stationary
Operating condition	OFF during testing
Condition of the equipment at the time of receipt	Good
Test case verdicts	
Test case does not apply to the test object	N/A
Test item does meet the requirement	P(Pass)
Test item does not meet the requirement	F(Fail)
Testing	
Date of receipt of test item	2016.01.28
Date(s) of performance of test	2016.02.03 to 2016.02.08

General remarks

The test result presented in this report relate only to the object(s) tested.
This report shall not be reproduced, except in full, without the written approval of the Issuing testing laboratory.

"(see appended table)" refers to a table appended to the report.

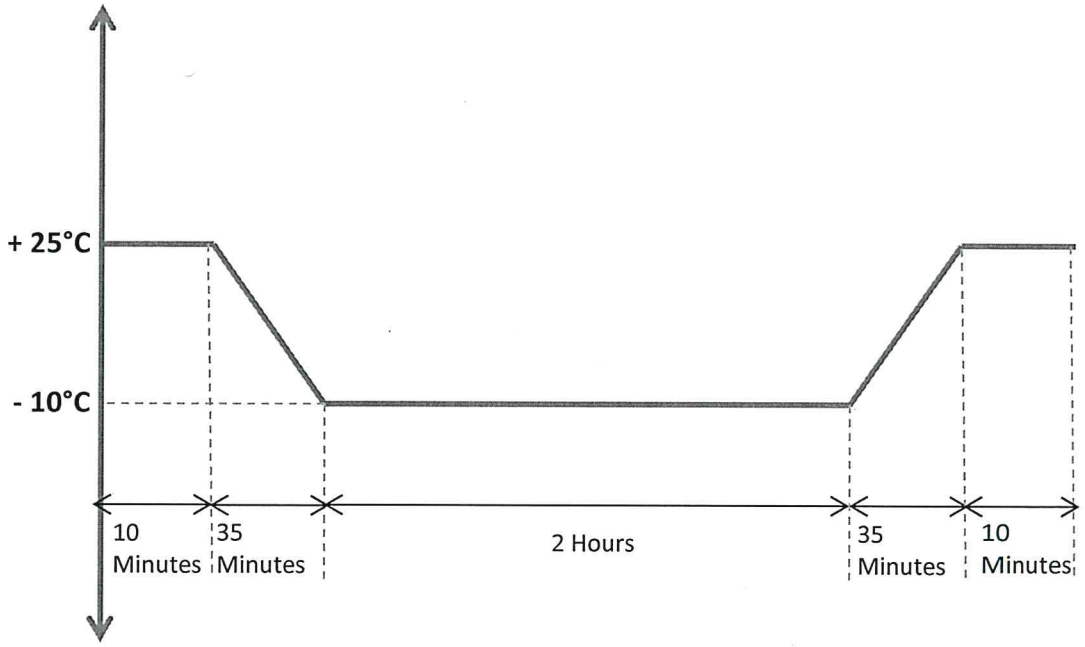
Throughout this report a point is used as the decimal separator.

Attachments:

Attachment 1: Photo Document

Environmental Testing			
Clause	Requirement + Test	Result - Remark	Verdict
1	**Cold Test as per IEC 60068-2-1**		**P**
1.1	Pre-checks		P
1.1.1	Examination before environmental conditioning.		P
1.1.1.1	Physical damages	EUT in good condition at the beginning of the test	P
1.1.1.2	EUT working condition	EUT was working fine before the cold test.	P
1.2	Cold Test specification		

Graph:

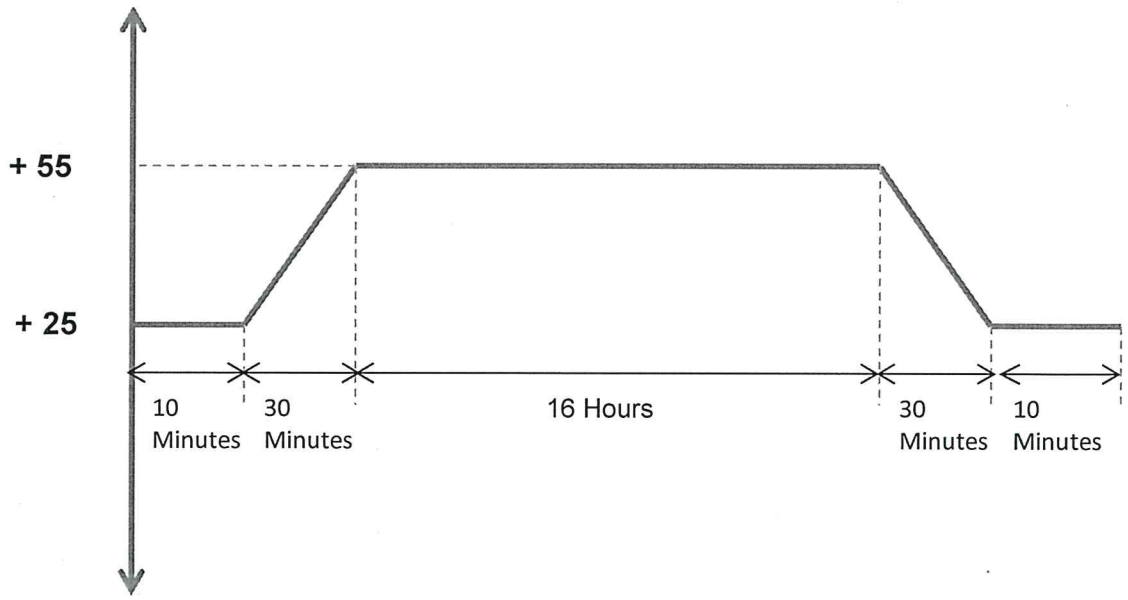


	EUT Operating Condition	Powered OFF	-
	Test Temperature	- 10°C	-
	Dwell Time	2 Hours	-
	No. of cycles	1 Cycle	-

1.3	Post check: Examination after environmental conditioning		P
1.3.1	Physical damages	No physical damages were observed	P
1.3.2	EUT working condition	EUT was working fine after the cold test	P

Environmental Testing			
Clause	Requirement + Test	Result - Remark	Verdict
2	**Dry Heat Test as per IEC 60068-2-2**		**P**
2.1	Pre-checks		P
2.1.1	Examination before environmental conditioning.		P
2.1.1.1	Physical damages	EUT in good condition at the beginning of the test	P
2.1.1.2	EUT working condition	EUT was working fine before the dry heat test.	P
2.2	Dry Heat Test Specification		

Graph:



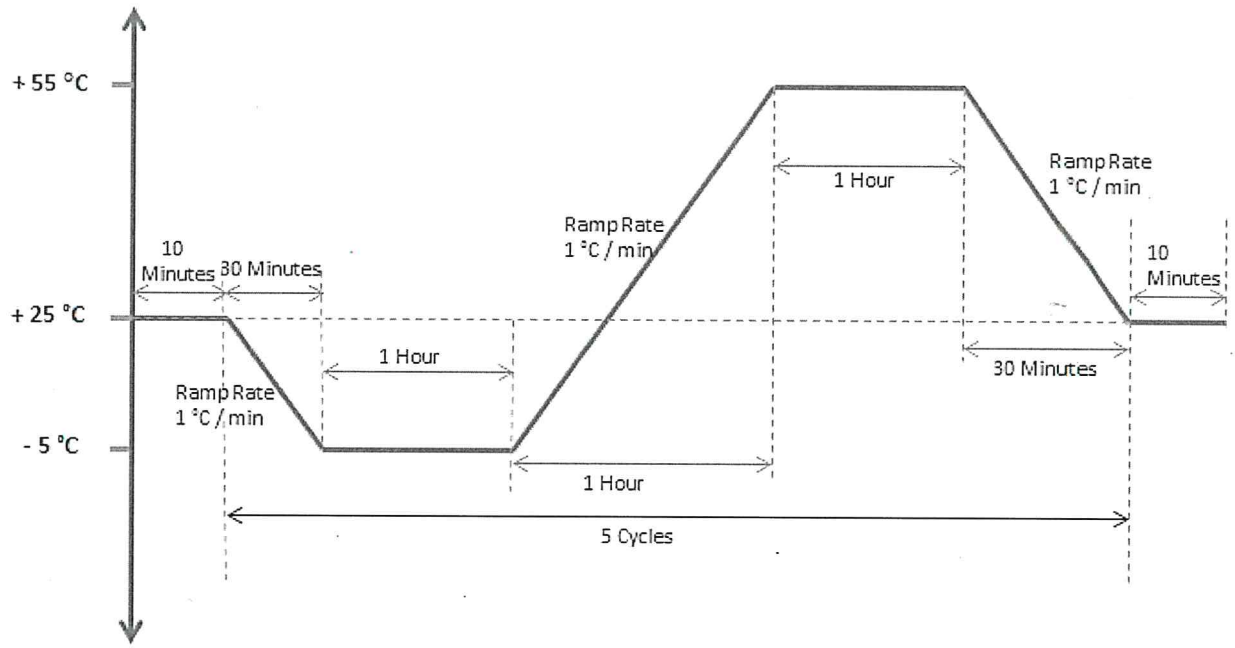
	EUT Operating Condition	Powered OFF	-
	Test Temperature	+55°C	-
	Dwell Time	16 Hours	-
	No. Of cycles	1 Cycle	-

2.3	Post check: Examination after environmental conditioning		P
2.3.1	Physical damages	No physical damages were observed.	P
2.3.2	EUT working condition	EUT was working fine after the dry heat test	P

Environmental Testing			
Clause	Requirement + Test	Result - Remark	Verdict

3	**Change of Temperature as per IEC 60068-2-14**		**P**
3.1	Pre-checks		P
3.1.1	Examination before environmental conditioning.		P
3.1.1.1	Physical damages	EUT in good condition at the beginning of the test	P
3.1.1.2	EUT working condition	EUT was working fine before the change of temperature test.	P
3.2	Change Of Temperature Test Specification		

Graph:



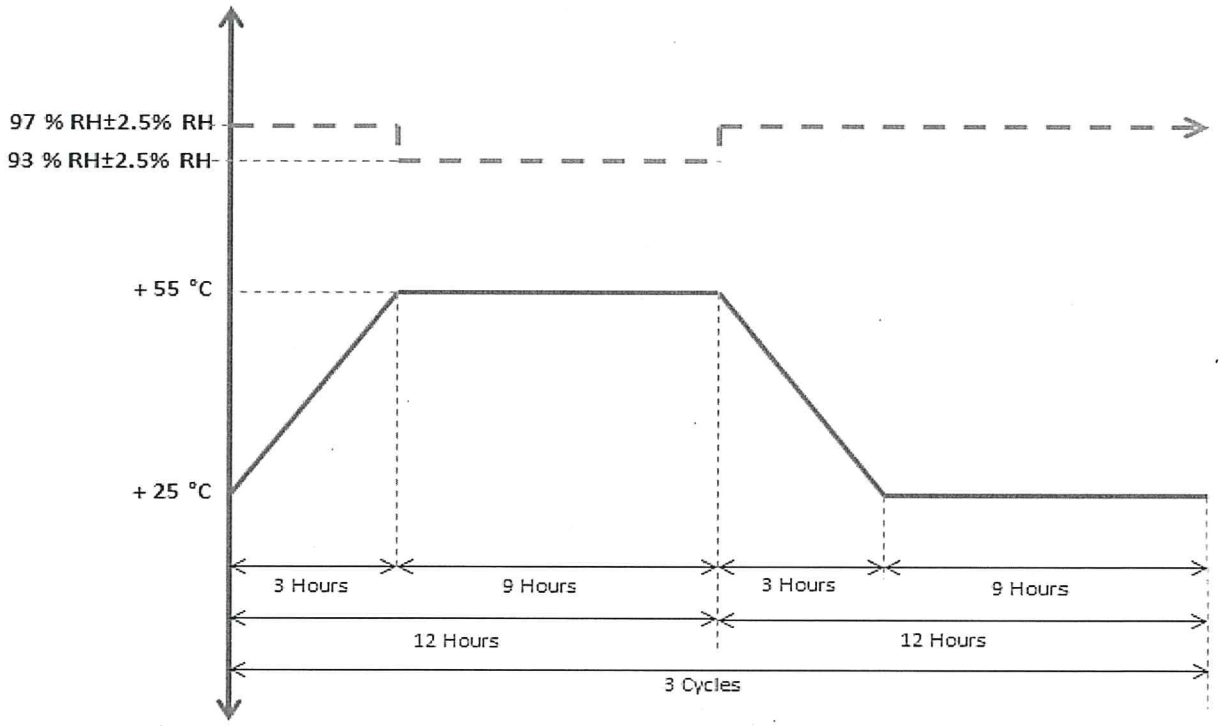
	EUT Operating Condition	Powered OFF	-
	Test Temperature	Upper: +55° C Lower: -5°C	-
	Rate of change of temperature	1°C/min	-
	Dwell Time	1 Hour at each temperature	-
	No. of cycles	5 Cycle's	-

3.3	Post check: Examination after environmental conditioning		P
3.3.1	Physical damages	No physical damages were observed	P
3.3.2	EUT working condition	EUT was working fine after the change of temperature test.	P

Environmental Testing			
Clause	Requirement + Test	Result - Remark	Verdict

4	**Damp Heat cyclic as per IEC 60068-2-30**		**P**
4.1	Pre-checks		P
4.1.1	Examination before environmental conditioning.		P
4.1.1.1	Physical damages	EUT in good condition at the beginning of the test	P
4.1.1.2	EUT working condition	EUT was working fine before the damp heat cyclic test	P
4.2	Damp Heat Cyclic Test Specification		

Graph:



	EUT Operating Condition	Powered OFF	-
	Ramp –up / -down time	3 Hours	-
	One Cycle duration	12 Hours +12 Hours	-
	No. of cycles	3 Cycle's	-
	Total Test Duration	72 Hours	-

4.3	Post check: Examination after environmental conditioning		P
4.3.1	Physical damages	No physical damages were observed.	P
4.3.2	EUT working condition	EUT was working fine after the damp heat cyclic test.	P

Environmental Testing

Attachment-1

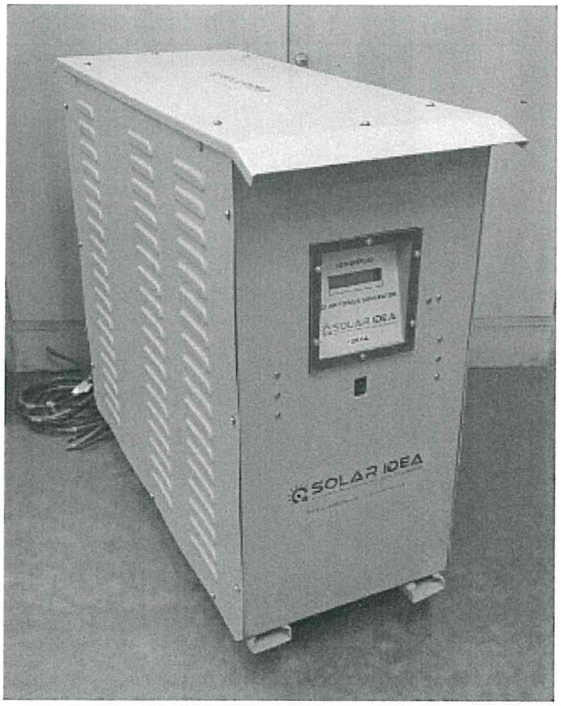
Photo Document

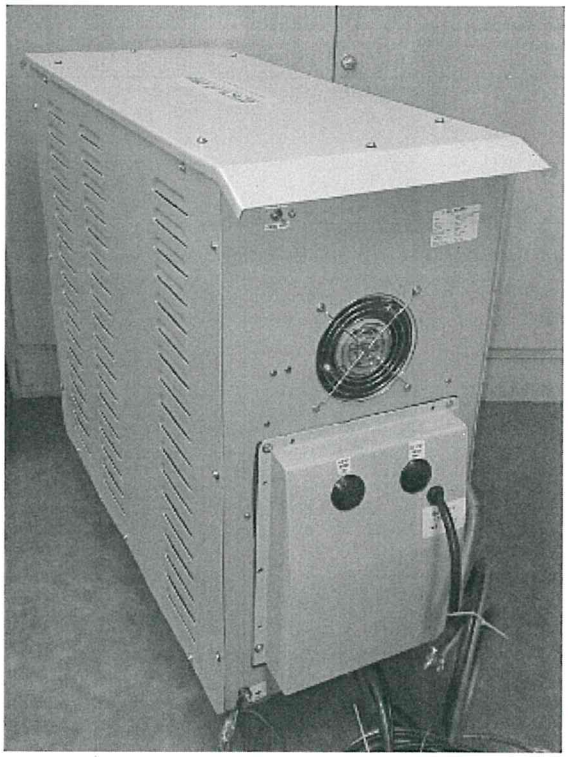
Front view

Rear view

Environmental Testing

Attachment-1





Overall View

*** End of Test Report ***