



**IEC 60529:1989+A1:1999+A2:2013
EN 60529:1991+A1:2000+A2:2013**

Measurement and Test Report


For

BEIJING EPSOLAR TECHNOLOGY CO., LTD.

NO.228, BLOCK A, 2ND FLOOR, BLDG 1, NO. 3 STREET, SHANGDI XINXI CHANYE JIDI,
HAIDIAN DISTRICT, BEIJING, CHINA

Tested Model: LS2024EPD

Multiple Models: LS1012EPD, LS1024EPD

This Report Concerns: <input checked="" type="checkbox"/> Original Report	Equipment Type: Solar charge controller
Test Engineer: Will Wang <i>Will Wang</i>	
Test Date: 2016-12-22	
Reviewed By: Robin He <i>Robin He</i>	
Prepared By: Bay Area Compliance Laboratories Corp. (Dongguan) No.69,Pulongcun, Puxinhu Industrial Zone, Tangxia Town Dongguan, Guangdong 523719, CHINA	

Note: The test data was only valid for the test sample(s). This test report is prepared for the customer shown above and for the specific product described herein. It must not be duplicated or used in part without prior written consent from Bay Area Compliance Laboratories Corp. (Dongguan).

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1 - GENERAL INFORMATION

1.1 Product Description for Equipment under Test (EUT)

The BEIJING EPSOLAR TECHNOLOGY CO., LTD.'s product, "EUT" as referred to in this report is a Solar charge controller. The test model is LS2024EPD, and the multiple models are LS1012EPD and LS1024EPD. DECLARATION OF SIMILARITY see page 10.

1.2 Objective

The following Declaration of Conformity of a device is prepared on behalf of the BEIJING EPSOLAR TECHNOLOGY CO., LTD. in accordance with EN 60529:1991+A1:2000+A2:2013 and IEC 60529:1989+A1:1999+A2:2013, Degrees of protection provided by enclosures (IP code). The objective of the manufacturer is to demonstrate compliance with EN 60529:1991+A1:2000+A2:2013 and IEC 60529:1989+A1:1999+A2:2013. Currently, EN 60529:1991+A1:2000+ A2:2013 and IEC 60529:1989+A1:1999+A2:2013 tests to be performed. They are as follows:

- Test for protection against object probe and for protection against solid foreign objects (IP6X) (CLAUSE 12.2+12.3 and CLAUSE 13.4+13.6);
- Test for secondary characteristic numeral 7, temporary immersion between 0.15m and 1m (IPX7) (CLAUSE 14.2.7)
-

Data has been collected, reduced, and analyzed within this report in accordance with EN 60529: 1991+A1:2000+A2:2013 and IEC 60529:1989+A1:1999+A2:2013. In order to demonstrate compliance, the manufacturer or a contracted laboratory makes measurements and takes the necessary steps to ensure that the equipment complies with the appropriate technical standards.

1.3 Related Submittal(s)/Grant(s)

No Related Submittals

1.4 Test Methodology

All measurements contained in this report were conducted with EN 60529:1991+A1:2000+A2:2013 and IEC 60529:1989+A1:1999+A2:2013, Degrees of protection provided by enclosures (IP code).

All measurement was performed at Bay Area Compliance Laboratories Corp. (Dongguan).

1.5 Test Equipment List

S/N	Manufacturer and Model	Instrument Type	Instrument I.D	Cal. Last Date	Cal. Due Date
1	FTR-3301B	Dust proof test chamber	201008	2016-03-04	2017-03-03
2	IPX7	Water tight caisson	201003	2015-03-26	2018-03-25
3	1500mm	Ruler	2010009	2015-01-27	2018-01-26
4	BND-D	IP4X Test Probe	BN20140425-02	2016-08-29	2017-08-28
5	PWS280	Hygrothermograph	1#	2016-03-21	2017-03-20

1.6 Equipment Under Test (EUT)

Manufacturer	Description	Model	Brand Name	Cert.
BEIJING EPSOLAR TECHNOLOGY CO., LTD	Solar charge controller	Tested Model: LS2024EPD Multiple Model: LS1012EPD, LS1024EPD	EPEVER	---
Manufacturer address	NO.228, BLOCK A, 2ND FLOOR, BLDG 1, NO. 3 STREET, SHANGDI XINXI CHANYE JIDI, HAI DIAN DISTRICT, BEIJING, CHINA			

2- Test for first characteristics numerals 6 (IP6X) (CLAUSE 12.2+12.3 and CLAUSE 13.4+13.6)

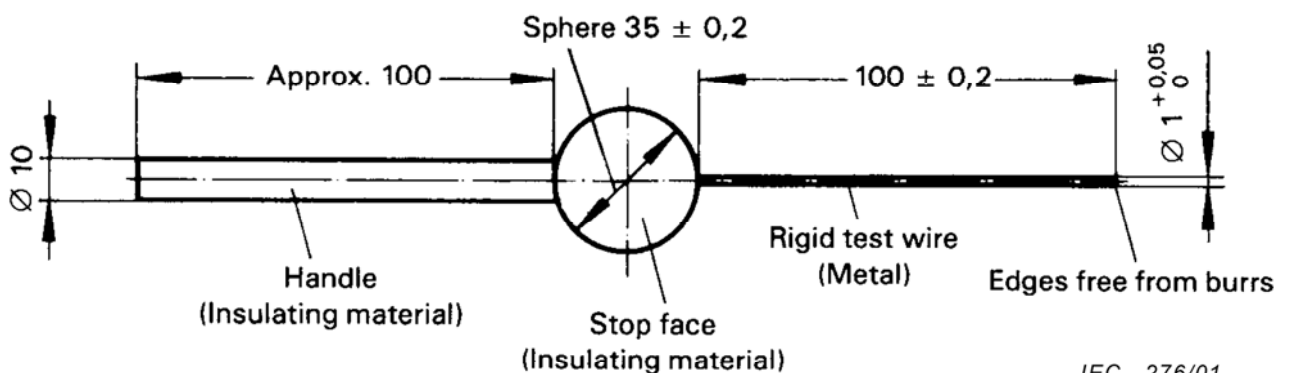
2.1 Tests for protection against access to hazardous parts indicated by the first characteristic numeral (CLAUSE 12.2+12.3)

2.1.1 Method

Access probes to test the protection of persons against access to hazardous parts are given in follow figure.

- 1) The test is made using a test wire of 1,0 mm inserted through any openings of the enclosure;
- 2) The test with the force $1 \pm 0.1\text{N}$;
- 3) For tests on low-voltage equipment, a low-voltage supply (of not less than 40 V and not more than 50 V) in series with a suitable lamp should be connected between the probe and the hazardous parts inside the enclosure. Hazardous live parts covered only with varnish or paint, or protected by oxidation or by a similar process, are covered by a metal foil electrically connected to those parts which are normally live in operation. The signal-circuit method should also be applied to the hazardous moving parts of high-voltage equipment;
- 4) Internal moving parts may be operated slowly, where this is possible.

Test wire 1,0 mm diameter, 100 mm long



2.1.2 Results

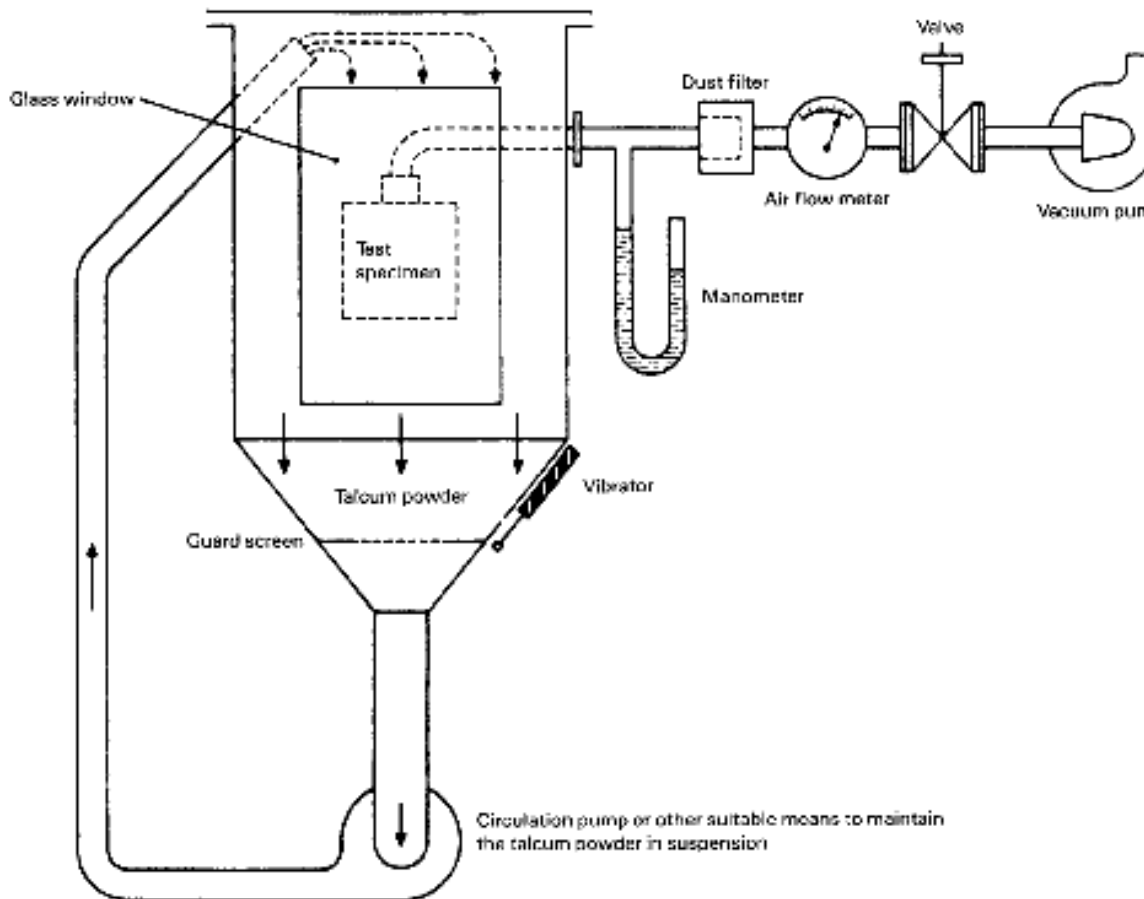
- (x) The access probe not touch hazardous live parts. (IP6X) (CLAUSE 12.2+12.3).
Pass

2.2 Tests for protection against solid foreign objects indicated by the first characteristic numeral (CLAUSE 13.4+13.6)

2.2.1 Method

Test device to verify protection against solid foreign objects like the follow figure.

- 1) The test is made using a dust chamber incorporating the basic principle shown in the following figure;
- 2) The enclosure under test is supported inside the test chamber and the pressure inside the enclosure is maintained below the surrounding atmospheric pressure by a vacuum pump. The suction connection shall be made to a hole specially provided for this test. See the EUT photograph 4.3;
- 3) The extraction rate is about 40 times volumes of the sample enclosure and the depression of the manometer is less than 2kPa;
- 4) The test duration is 2 hours.



IEC 29041

2.2.2 Results

- (x) No deposit of dust was observable inside the enclosure at the end of the test. (IP6X) (CLAUSE 13.4+13.6).
Pass

3- Test for protection against water characteristics numerals 7(IPX7) (CLAUSE 14.2.7)

3.1 Method

Test is made by completely immersing the enclosure in water in its service position as specified by the manufacturer so that the following conditions are satisfied:

- 1) The lowest point of enclosures with a height less than 850mm is located 1000mm below the surface of the water;
- 2) The highest point of enclosures with a height equal to or greater than 850mm is located 150mm below the surface of the water;
- 3) Test duration is 30 minutes;
- 4) The water temperature does not differ from that of the equipment by more than 5K.

3.2 Results

- (x) No water accumulated inside the enclosure.
- (x) The EUT except wire terminal complies with the requirement for protection against water characteristics numerals 7 (IPX7) (CLAUSE14.2.7)

Pass

Note: The wire terminal shall test and evaluated in final system.

4- EUT PHOTOGRAPHS

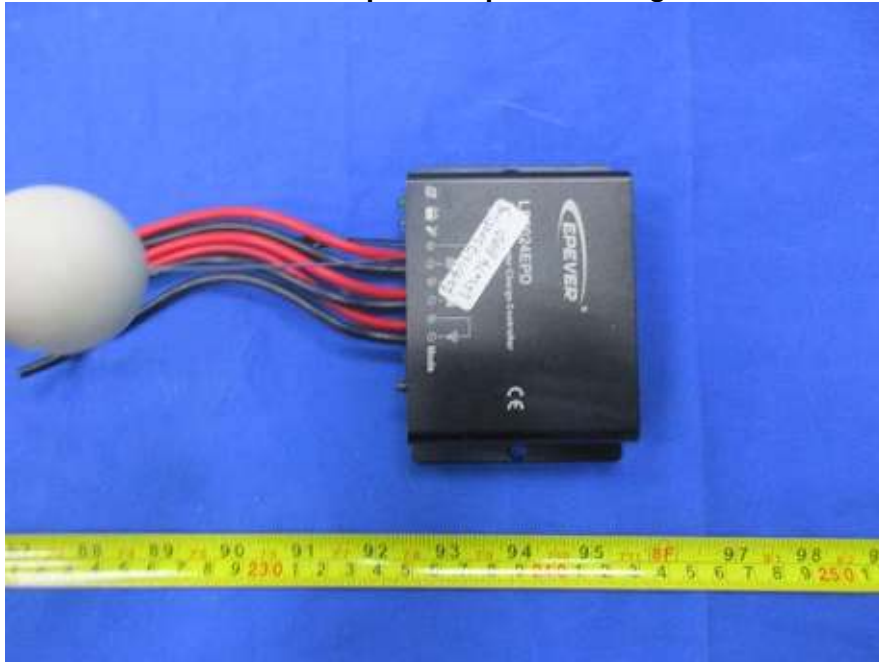
4.1.1 EUT-Top view of the unit proceed IPX7 test



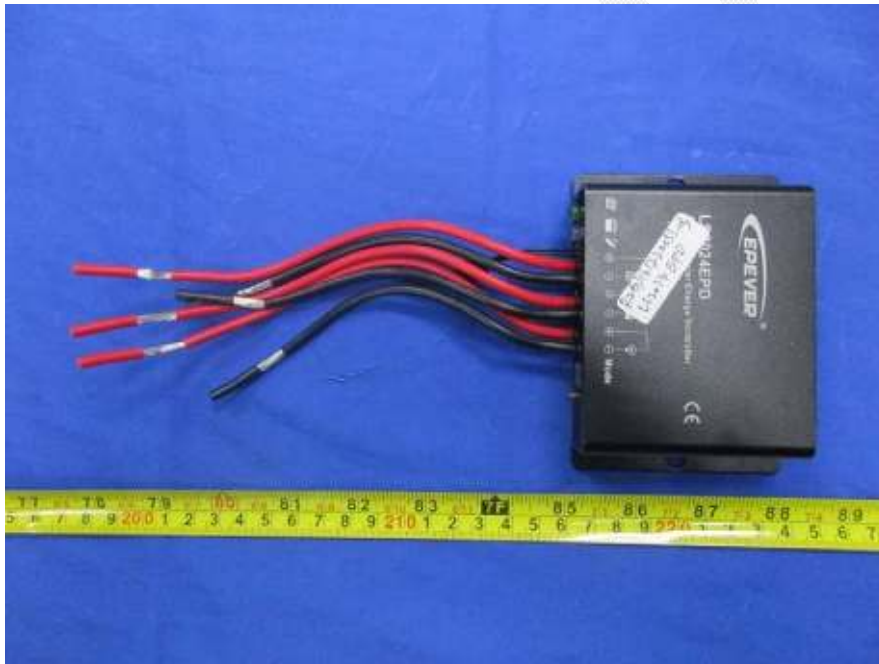
4.2.1 EUT- Whole View of the unit inside dust chamber



4.2.2 EUT- View of the unit proceed protection against access to hazardous parts test



4.3.1 EUT- View of unit



5- DECLARATION OF SIMILARITY

BEIJING EPSOLAR TECHNOLOGY CO., LTD
NO.228, BLOCK A, 2ND FLOOR, BLDG 1, NO 3 STREET, SHANGDIXINXI
CHANYEJIDI, HAIDIAN, BEIJING, CHINA
Tel: 010-82894856

DECLARATION OF SIMILARITY

Date: 2016-12-22

Dear Sir or Madam:

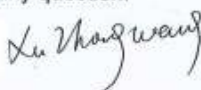
We, BEIJING EPSOLAR TECHNOLOGY CO.,LTD. hereby declare that our product solar charge controller, Model Number: LS2024EPD, LS1012EPD , LS1024EPD are identical with the same circuit principle. are electrically identical with the same electromagnetic emissions and electromagnetic compatibility characteristics.

Their different ceare as following:

Model	Battery	Charge current	Max. PV open circuit voltage	Max. output current
LS2024EPD	12/24V	20A	50V	20A
LS1012EPD	12V	10A	30V	10A
LS1024EPD	12/24V	10A	50V	10A

Please contact me if you have any question.

Signature:



Print Name: Xu zhong wang

Title: Manager

*****End of report *****