

TEST REPORT

Reliability Laboratory

Report No.: HC50077/2017

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Date: May 17, 2017

BIG SUN INDUSTRY CO., LTD.
5F, NO. 398, KEELUNG ROAD, SECTION 1,
TAIPEI, TAIWAN

The following merchandise was submitted and identified by the vendor as:

Product Description: IP68 Heavy Duty LED Strips
Style/ Item No.: BS-HDS/ No.1
Manufacturer/Vendor: Big Sun Industry Co., Ltd.
Country of Origin: Taiwan
Quantity: Total 1 piece
Testing Period: May 11, 2017 to May 15, 2017

We have tested the submitted sample(s) as requested and the following results were obtained:

Test Required:

Test for Degrees of Protection Provided by Enclosures (IEC 60598-1 Edition 8.0: 2014 Section 9)

IP Code	IP68
First characteristic numeral	Degrees of protection against access to hazardous parts and against solid foreign objects
Second characteristic numeral	Degrees of protection against ingress of water

Test Results:

Conclusion
Submittals sample(s) comply with the requirement and acceptance conditions of IEC 60598-1 Edition 8.0: 2014 Section 9. Degrees of Protection Provided by Enclosures -- IP68. The detailed description of test result, please see attached sheet(s).

Signed for and on behalf of
SGS TAIWAN Ltd.



Hank Chiou
Supervisor

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Test for Degrees of Protection Provided by Enclosures:

Test Equipment:

Name	Brand	Model	Serial No.
1.0 mm Test Wire Probe	ED&D	TRP-02	B0050180
Digital Force Gauge	ALGOL	HF-50	HF-106764
Dust Tester	T-MACHINE	TMJ-9723S	T-23-110708
IPX7/IPX8 Immersion Tank	Self-made	SGS-ETR-0201	000001
AC/DC Withstand Voltage/ Insulation Tester	Extech	7142	1340019

Lab Environmental Conditions:

Ambient temperature: (25 ± 3) °C

Ambient humidity: (55 ± 20) % RH

Test Method/ Specification:

Test method: IEC 60598-1 Edition 8.0: 2014 Section 9--IP68

1. Test for protection against access to hazardous parts:

Test method: The test wire with 1.0 mm in diameter and 100 mm long is pushed against or inserted through any openings of the enclosure. Examine whether the test wire touches the hazardous live parts inside the enclosure or not.

Test force: 1 N±10 %

2. Test for protection against solid foreign objects:

Test method: Dust test

Type of dust: Talcum powder

The amount of dust: 2 kg per cubic meter of the chamber volume

Test duration: 3 hours

- Examine the protection against ingress of dust of specimen(s) and perform functional check after this test.
- Functional check: Connect the specimen with rated power 12V_{DC} then examine whether the LED lighten function of specimen could be work normally or not.

Test Method/ Specification--Continued:

3. Test for protection against water:

- Test method: Completely immerse the specimen in water in its service position as specified by client.
- Test condition: The lowest point of enclosures is located 2000 mm below the surface of the water
- Test duration: 30 minutes
- Test device: As shown in photo 3

- Examine the protection against ingress water of specimen(s) and perform the withstand voltage test (500V_{DC}, 1 minute) and perform functional check after this test.
- Functional check: Connect the specimen with rated power 12V_{DC} then examine whether the LED lighten function of specimen could be work normally or not.

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Specimen:

Style/ Item No.: BS-HDS/ No.1

Quantity: Total 1 piece

Test Result:

A. Degrees of protection against access to hazardous parts and against solid foreign objects (IP6X)

A-1 Test for protection against access to hazardous parts (IP6X)

Test Result		
Check Item		
Style/ Item No.		
BS-HDS/ No.1		
1	Does the test wire penetrate any openings of the enclosure?	No
2	(followed check item 1) If the test wire penetrates any openings of the enclosure, does the test wire touch any hazardous live parts or any hazardous mechanical parts?	N/A
3	(followed check item 2) Does adequate clearance be kept between the test wire and hazardous live parts or hazardous mechanical parts?	N/A

Note 1: N/A means "Not Applicable".
 Note 2: The check items in this test report for inspecting the degree of protection provided by enclosures are reference to the requirements specified in IEC 60598-1 Edition 8.0: 2014 Section 9 and in accordance with the acceptance conditions specified by client.

A-2 Test for protection against solid foreign objects (IP6X)

Test Result		
Check Item		
Style/ Item No.		
BS-HDS/ No.1		
1	Does any dust deposit inside the enclosure at the end of the test?	No
2	Functional Check	Normal

Note 1: N/A means "Not Applicable".
 Note 2: The check items in this test report for inspecting the degree of protection provided by enclosures are reference to the requirements specified in IEC 60598-1 Edition 8.0: 2014 Section 9 and in accordance with the acceptance conditions specified by client.

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Test Result--Continued:

B. Degree of protection against ingress of water (IPX8)

Check Item		Test Result
		Style/ Item No.
		BS-HDS/ No.1
1	Does any water enter the enclosure?	No
2	(followed check item 1) If any water has entered, does the water accumulate near the cable end or live parts?	N/A
2.1	(followed check item 2) Does the water be sufficient to interfere with the correct operation of the equipment or impair safety?	N/A
2.2	(followed check item 2.1) Does the water deposit on insulation parts where it could lead to tracking along the creepage distances?	N/A
2.3	(followed check item 2.2) Does the water reach live parts or windings not designed to operate when wet?	N/A
3	Withstand voltage test (500V _{DC} , 1 minute): During the test whether there is a flashover or insulation breakdown phenomenon?	No
4	Functional Check	Normal
<p>Note 1: N/A means "Not Applicable".</p> <p>Note 2: The check items in this test report for inspecting the degree of protection provided by enclosures are reference to the requirements specified in IEC 60598-1 Edition 8.0: 2014 Section 9 and in accordance with the acceptance conditions specified by client.</p>		

Test Photos:

	
<p>1. Appearance of specimen</p>	
	
<p>2. Test for protection against solid foreign objects (Dust test)</p>	<p>3. Test for protection against water</p>
	
<p>4. Dielectric Withstanding Voltage Test</p>	<p>5. Functional check</p>

— — — The End of Test Report — — —

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