A Plus Safety Consulting Co., Ltd.

TEST REPORT

Report No	:	D22003-19
Tested by (name and signature)	:	Beep Gao /
Approved by (name and signature)	:	Bruce Wang /
Date of issue	:	2019-03-11
Total number of pages	:	Total 13 pages, including 6 pages of Annex A
Testing Laboratory	:	A Plus Safety Consulting Co., Ltd.
Address	:	No. 66-1, Ln. 169, Sec. 2, Datong Rd., Xizhi Dist., New Taipei City 221, Taiwan
Applicant's name	:	FSP Group Inc.
Address	:	No. 22, Jianguo E., Rd, Taoyuan, Taiwan.
Test specification:		
Standard	:	IEC 60529 (Edition 2.2)
Test procedure	:	N/A
Non-standard test method……..	:	N/A
Test item description	:	LED Controlgear
Model/Type reference	:	FSP200-FZAE1(105)DGxx, FSP200-FZAE1(210)DGxx, FSP200-FZAE1(105)DG1xx, FSP200-FZAE1(210)DG1xx, FSP200-FZAE1(105)DG2xx, FSP200-FZAE1(210)DG2xx (each x can be 0 – 9, A – Z or blank for marketing purpose.)
IP Code	:	IP67

Form Copyright © 2014 A Plus Safety Consulting Co., Ltd.

Testing.....:

Date of receipt of test item .....: 2019-01-14

Date (s) of performance of tests.....: 2019-02-12 to 2019-02-15

General remarks:

The test results presented in this report relate only to the object tested.
This report shall not be reproduced, except in full, without the written approval of the Issuing testing laboratory.
"(see Enclosure #)" refers to additional information appended to the report.
"(see appended table)" refers to a table appended to the report.

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

General product information:

1. All models are similar, except for number of outlet ports.

FSP200-FZAE1(105)DGxx and FSP200-FZAE1(210)DGxx series	**FSP200-FZAE1(105)DG1xx, FSP200-FZAE1(210)DG1xx, FSP200-FZAE1(105)DG2xx and FSP200-FZAE1(210)DG2xx series**
	

2. The measured overall dimensions of all models with enclosure are approximately 200.4 mm (L) x 68.1 mm (W) x 39.4 mm (H)

3. The definition of “enclosure” is including outer box and intimal potting compound according to the client’s information.

4. See Annex A for photographs.

Summary of testing:

The tested samples were pre-production models without the serial numbers.

Unless otherwise specified, the IP6X tests were conducted at model FSP200-FZAE1(105)DG1 to represent other models.

Unless otherwise specified, the IPX7 tests were conducted at model FSP200-FZAE1(210)DG1 to represent other models.

Form Copyright © 2014 A Plus Safety Consulting Co., Ltd.

Tests to be conducted			
Test No.	**Test Name**	**Clause**	**Results**
1	Dust Test for First Characteristic Numerals 6	12.2, 12.3, 13.4, 13.6	P
2	Test for Second Characteristic Numeral 7: Temporary Immersion between 0.15 m and 1 m	14.2.7, 14.3	P

Possible test case verdicts:

- test case does not apply to the test object ...: N/A
- test object does meet the requirement.....: P (Pass)
- test object does not meet the requirement...: F (Fail)

Unless specified otherwise in the individual methods, the tests shall be conducted under the following ambient conditions. Confirmation of these conditions shall be recorded at the time the test is conducted.

Ambient Temperature : 25 °C ± 10 °C, Relative Humidity: 50 % ± 25 %. Air pressure: 86 kPa to 106 kPa

※ **Test Sample Identification**

The table below is provided to correlation of sample numbers and specific product related information. Refer to this table when a test identifies a test sample by "Sample No." only.

Sample Card No.	Date Received	Test No.	Sample No.	Product Identification
D22190114	2019-01-14	1	1	LED Controllgaer Model: FSP200-FZAE1(105)DG1
		2	2	LED Controllgaer Model: FSP200-FZAE1(210)DG1

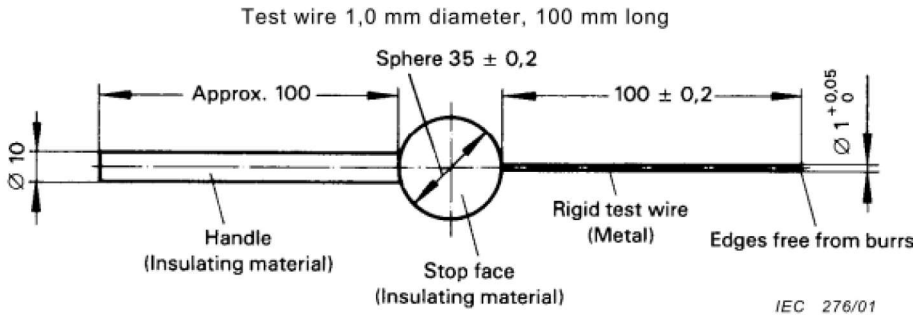
Form Copyright © 2014 A Plus Safety Consulting Co., Ltd.

Dust Test for First Characteristic Numerals 6: **CL 12.2, CL 12.3, CL 13.4, CL 13.6**

TEST METHOD

Step 1:

Use specified test probe below with a force of 1 N ± 10 % to push against any opening of the enclosure.



TEST RESULT

The test result was considered acceptable since the access probe did not touch hazardous live parts.

Test Record:

Model	Sample No.	Observations
FSP200-FZAE1(105)DG1	1	The access probe did not touch hazardous live parts.

Form Copyright © 2014 A Plus Safety Consulting Co., Ltd.

Dust Test for First Characteristic Numerals 6: CL 12.2, CL 12.3, CL 13.4, CL 13.6

Step 2:

The test was made using a dust chamber incorporating the basic principles shown in figure 2 whereby the powder circulation pump may be replaced by other means suitable to maintain the talcum powder in suspension in a closed test chamber.

The talcum powder used is able to pass through a square-meshed sieve the nominal wire diameter of which is 50 µm and the nominal width of a gap between wires 75 µm.

The amount of talcum powder to be used was 2 kg per cubic metre of the test chamber volume. It hasn‘t been used for more than 20 tests.

The object of the test was to draw into the enclosure, by means of depression, a volume of air 80 times the volume of the sample enclosure tested without exceeding the extraction rate of 60 volumes per hour.

The depression did not exceed 2 kPa (20 mbar) on the manometer shown in figure 2.

Since a volume of air 80 times the volume of the sample enclosure was not obtained within 2 hours, the duration of the test was extended to 8 hours.

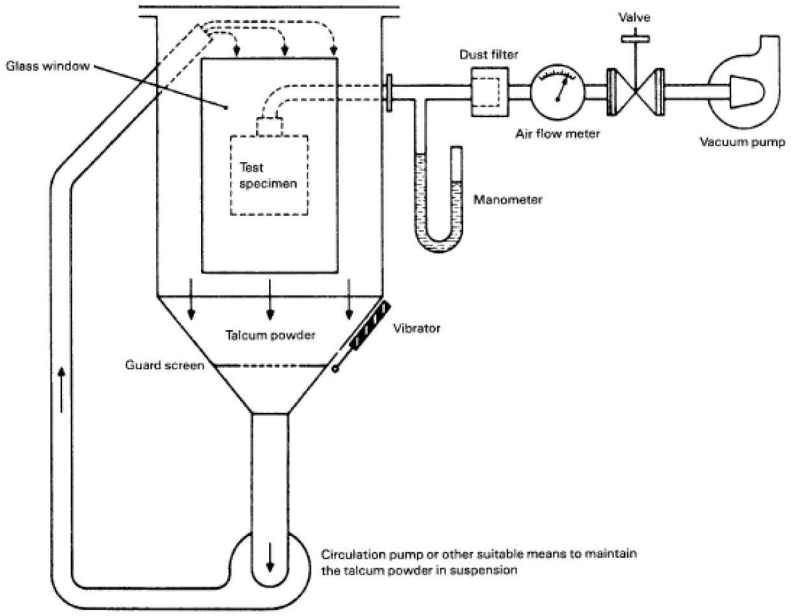


Figure 2 – Test device to verify protection against dust (dust chamber)

Form Copyright © 2014 A Plus Safety Consulting Co., Ltd.

Dust Test for First Characteristic Numerals 6: **CL 12.2, CL 12.3, CL 13.4, CL 13.6**

TEST RESULT

The test result was considered acceptable since the dust was not found in the cord or on components after test.

Test Record:

Model	Sample No.	Observations
FSP200-FZAE1(105)DG1	1	The dust was not found in the cord or on components

Form Copyright © 2014 A Plus Safety Consulting Co., Ltd.

Test for Second Characteristic Numeral 7: Temporary Immersion between 0.15 m and 1 m: **CL 14.2.7, CL 14.3**

Test Method

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

a) the lowest point of enclosures with a height less than 850 mm was located 1 000 mm below the surface of the water.
b) the duration of the test was 30 min;
c) the water temperature did not differ from that of the equipment by more than 5 K.

According the client's requirement, after the test, the samples shall withstand an electric strength test

TEST RESULT

The test result was considered acceptable since no deposit of water was found in the cord or on components after test.

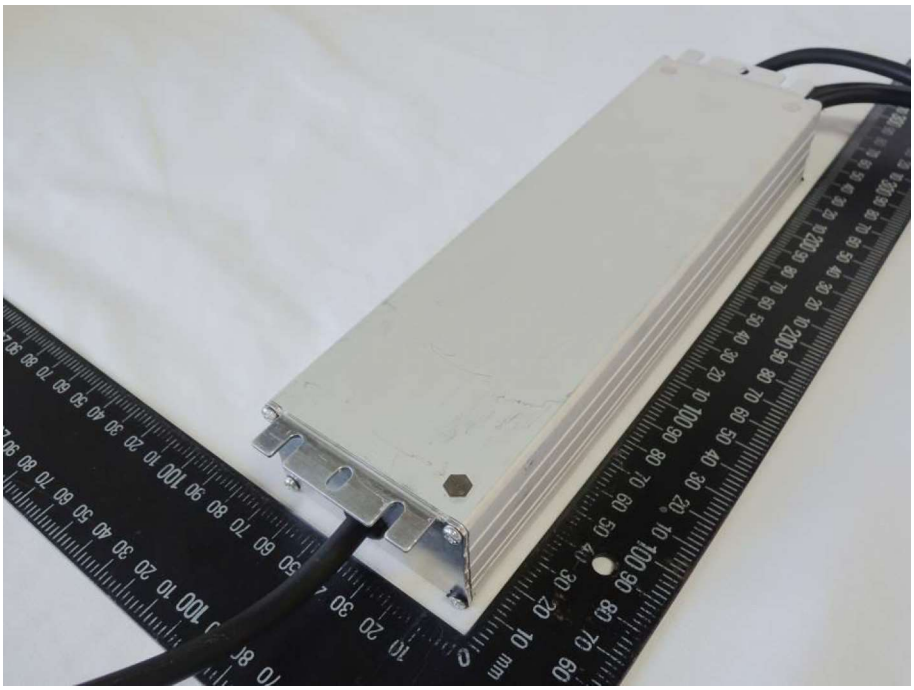
Test Record:

Model	Sample No.	Observations
FSP200-FZAE1(210)DG1	2	The water was not found in the cord or on components

Form Copyright © 2014 A Plus Safety Consulting Co., Ltd.

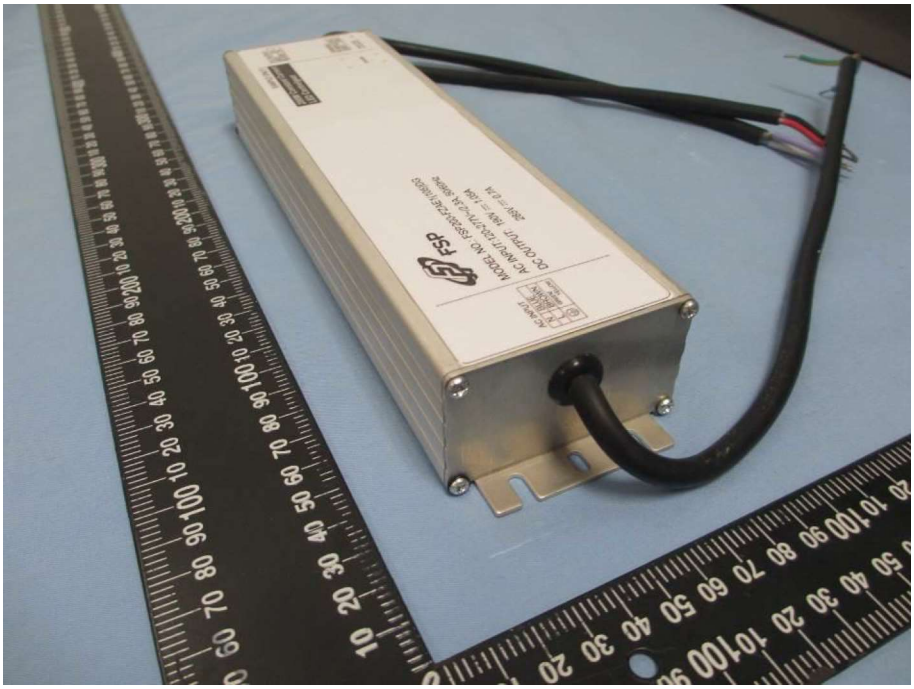
Annex A – Photographs:

Overall View 1 of Model FSP200-FZAE1(105)DG1 and Model FSP200-FZAE1(210)DG1

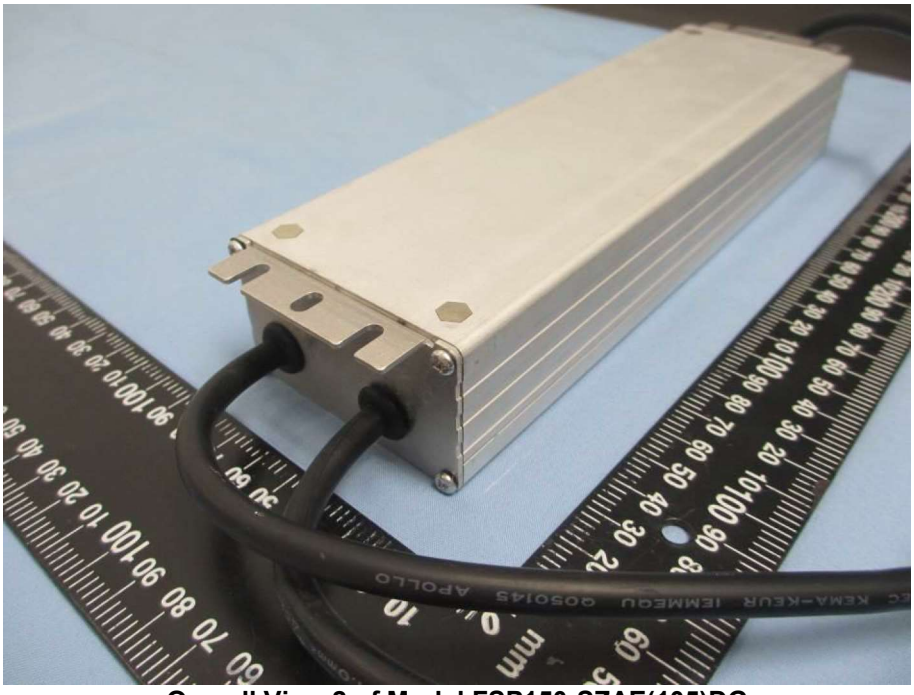


Overall View 2 of Model FSP200-FZAE1(105)DG1 and Model FSP200-FZAE1(210)DG1

Form Copyright © 2014 A Plus Safety Consulting Co., Ltd.

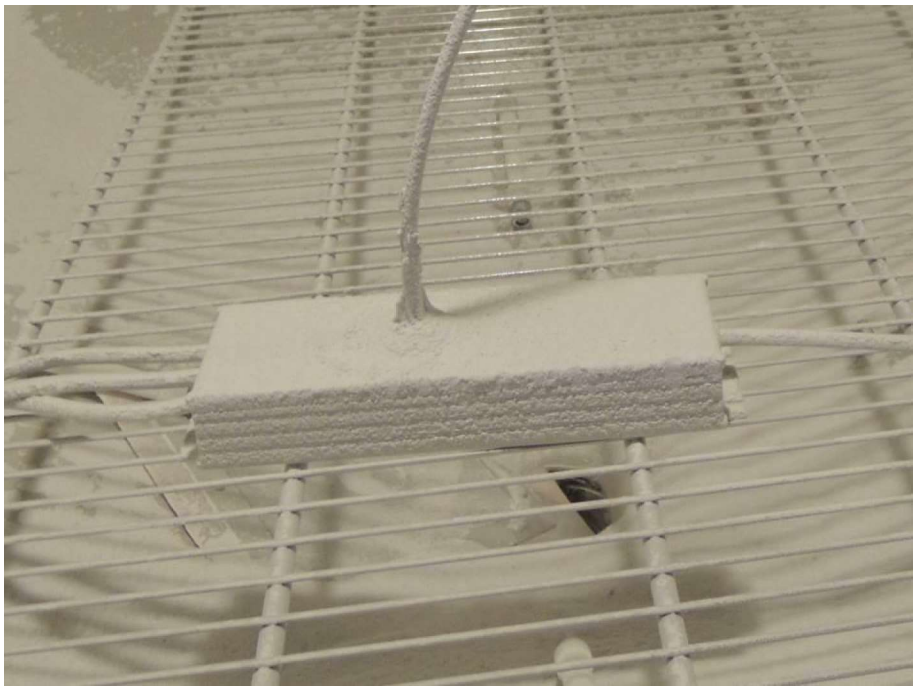


Overall View 1 of Model FSP150-SZAE(105)DG



Overall View 2 of Model FSP150-SZAE(105)DG

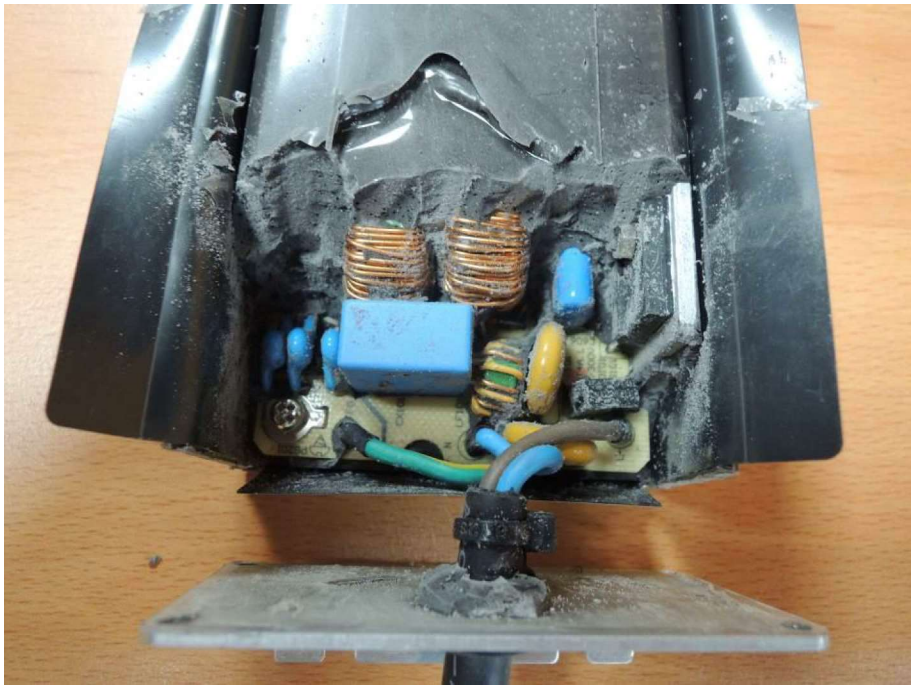
Form Copyright © 2014 A Plus Safety Consulting Co., Ltd.



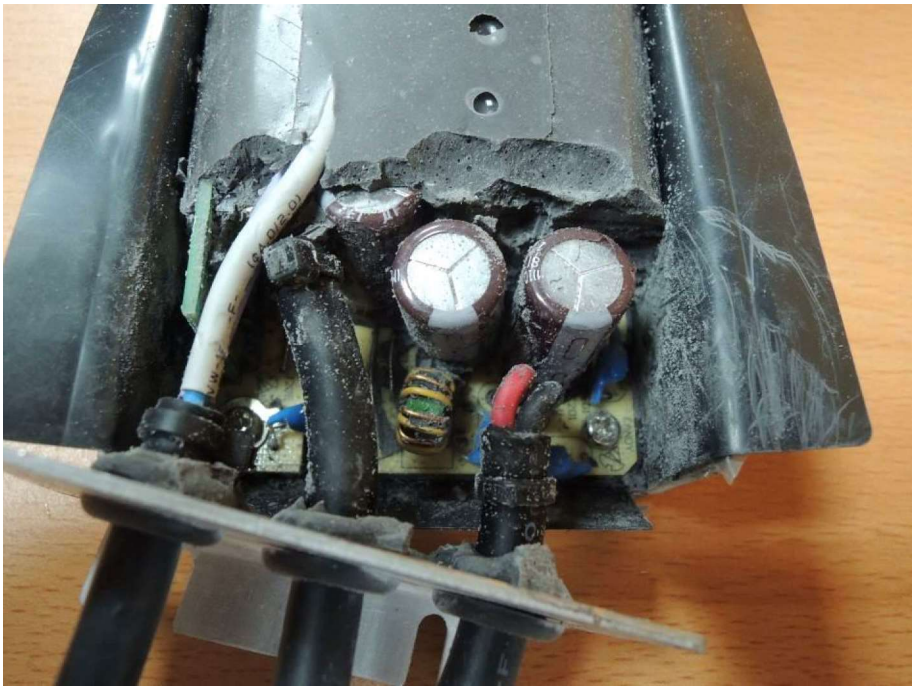
View of Model FSP200-FZAE1(105)DG1 under IP6X Testing

Internal View 1 of Model FSP200-FZAE1(105)DG1 after IP6X Testing

Form Copyright © 2014 A Plus Safety Consulting Co., Ltd.

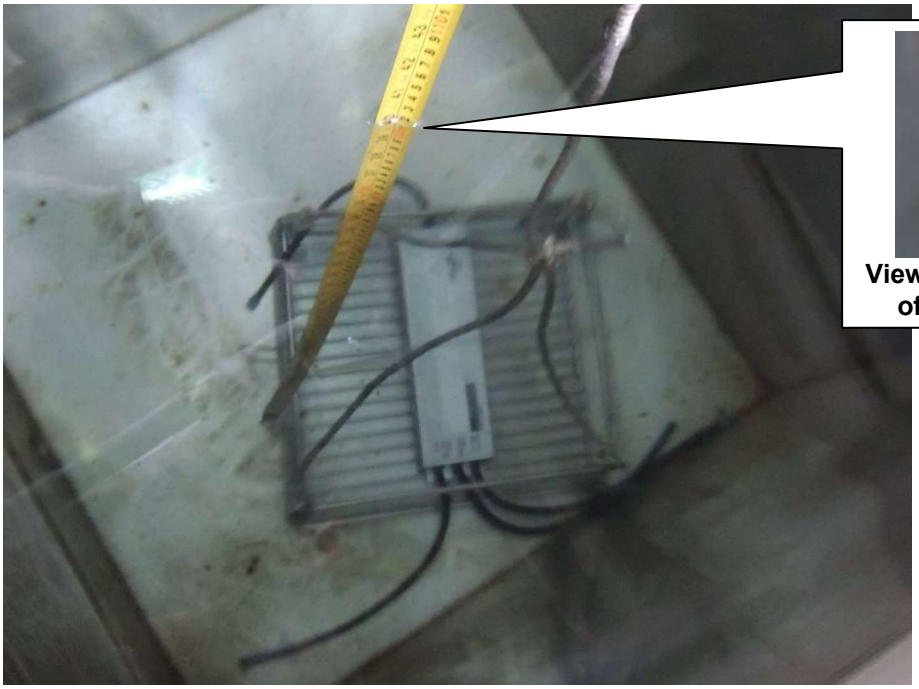


Internal View 2 of Model FSP200-FZAE1(105)DG1 after IP6X Testing



Internal View 3 of Model FSP200-FZAE1(105)DG1 after IP6X Testing

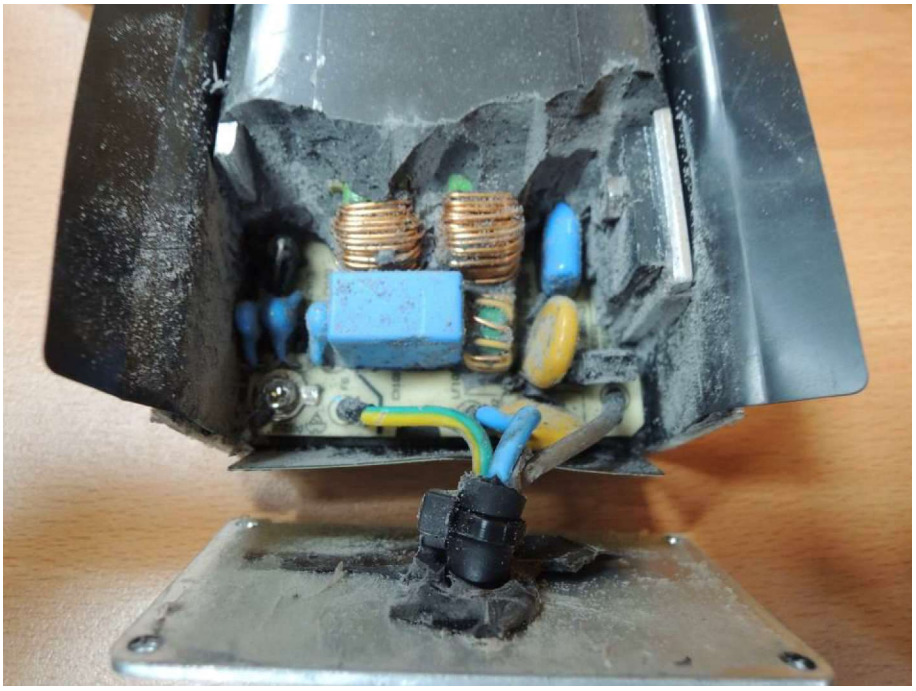
Form Copyright © 2014 A Plus Safety Consulting Co., Ltd.



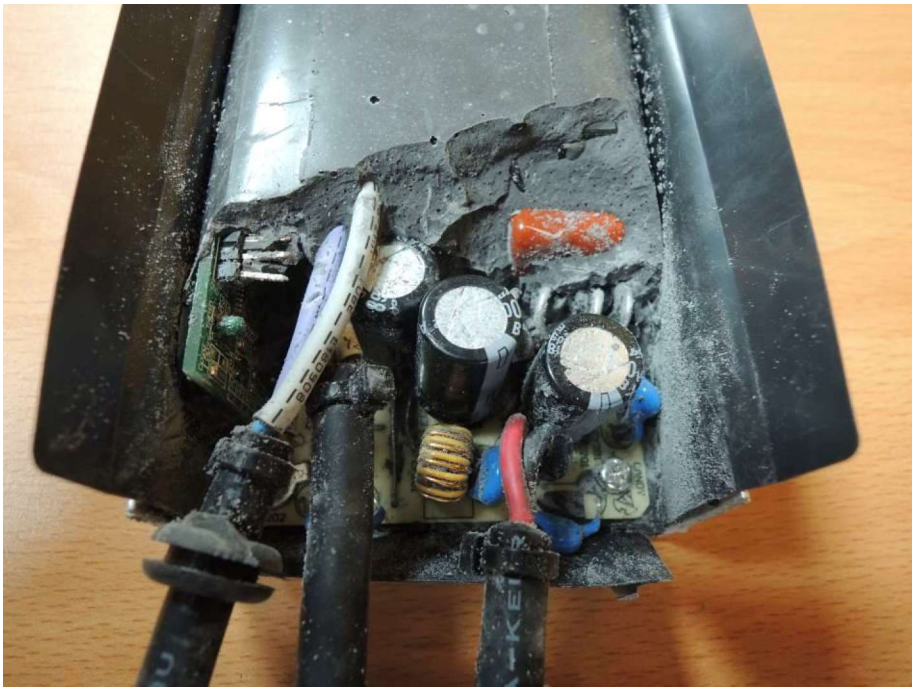
View of Model FSP200-FZAE1(210)DG1 under IPX7 Testing

Internal View 1 of Model FSP200-FZAE1(210)DG1 after IPX7 Testing

Form Copyright © 2014 A Plus Safety Consulting Co., Ltd.



Internal View 2 Model FSP200-FZAE1(210)DG1 after IPX7 Test



Internal View 3 of Model FSP200-FZAE1(210)DG1 after IPX7 Test

Form Copyright © 2014 A Plus Safety Consulting Co., Ltd.