



中国认可
国际互认
检测
TESTING
CNAS L0095



Deutsche
Akkreditierungsstelle
D-PL-17198-01-00

Test Report No.:
GJW2020-5459

TEST REPORT

EUT : Philips UV-C Disinfection air unit

MODEL/TYPE : UVCA200, UVCA100

UVCA200 120W 01, UVCA200 120W 02, UVCA200 120W 03,
UVCA200 120W 04, UVCA200 120W 05, UVCA200 120W 06,
UVCA200 120W 07, UVCA200 120W 08, UVCA200 120W 09,
UVCA200 120W 10, UVCA200 120W 11, UVCA200 120W 12,
UVCA100 84W 01, UVCA100 84W 02, UVCA100 84W 03,
UVCA100 84W 04, UVCA100 84W 05, UVCA100 84W 06,
UVCA100 84W 07, UVCA100 84W 08, UVCA100 84W 09,
UVCA100 84W 10, UVCA100 84W 11, UVCA100 84W 12.

220-240V~ 50-60Hz


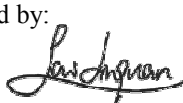
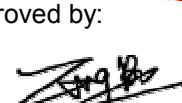
CLIENT : Signify Luminares (Shanghai) Co., Ltd

Classification of Test : COMMISSION TEST

Vkan Certification & Testing Co., Ltd.

威凯检测技术有限公司

Add.: No.3, Tiantaiyi Road, Kaitai Avenue, Science City, Guangzhou, 510663, P. R. China
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Test Report No. GJW2020-5459		Page 2 of 38	
Client	Name: Signify Luminares (Shanghai) Co., Ltd Address: 2/F, Building 6, No.1805 Huyi Highway, Malu Town, Jiading District, Shanghai City, P.R.China		
Manufacturer	Name: Signify Luminares (Shanghai) Co., Ltd Address: 2/F, Building 6, No.1805 Huyi Highway, Malu Town, Jiading District, Shanghai City, P.R.China		
Equipment under Test	Name : Philips UV-C Disinfection air unit Model/Type : UVCA200 Trade mark : PHILIPS Serial no. : — Sampling : —		
Date of Receipt.	2020.09.08	Date of Testing	2020.09.08 ~ 2020.10.19
Test Specification		Test Result	
EN 55014-1: 2017 Electromagnetic compatibility - Requirements for household appliances, electric tools and similar apparatus - Part 1: Emission		PASS	
EN 55014-2: 2015 Electromagnetic compatibility - Requirements for household appliances, electric tools and similar apparatus - Part 2: Immunity - Product family standard		PASS	
EN 61000-3-2: 2019 Electromagnetic compatibility (EMC) - Part 3-2: Limits - Limits for harmonic current emissions (equipment input current ≤ 16 A per phase)		PASS	
EN 61000-3-3:2013+A1:2019 Electromagnetic compatibility (EMC) - Part 3-3: Limits - Limitation of voltage changes, voltage fluctuations and flicker in public low-voltage supply systems, for equipment with rated current ≤ 16 A per phase and not subject to conditional connection		PASS	
Evaluation of Test Result	The equipment under test was found to comply with the requirements of the standards applied. Issue Date: 2020.10.19		
<div style="display: flex; justify-content: space-between;"> <div> Tested by:  Li Minhua Name Signature </div> <div> Reviewed by:  Lai Jinquan Name Signature </div> <div> Approved by:  Name Signature </div> </div>			
Other Aspects: NONE			
Abbreviations: OK, Pass = passed Fail = failed N/A= not applicable EUT= equipment, sample(s) under tested			
This test report relates only to the EUT, and shall not be reproduced except in full, without written approval of CVC .			

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1. General Product Information

The appliance is Philips UV-C Disinfection air unit.

Product list: UVCA200, UVCA100

UVCA200 120W 01, UVCA200 120W 02, UVCA200 120W 03,
UVCA200 120W 04, UVCA200 120W 05, UVCA200 120W 06,
UVCA200 120W 07, UVCA200 120W 08, UVCA200 120W 09,
UVCA200 120W 10, UVCA200 120W 11, UVCA200 120W 12,
UVCA100 84W 01, UVCA100 84W 02, UVCA100 84W 03,
UVCA100 84W 04, UVCA100 84W 05, UVCA100 84W 06,
UVCA100 84W 07, UVCA100 84W 08, UVCA100 84W 09,
UVCA100 84W 10, UVCA100 84W 11, UVCA100 84W 12.

The last two numbers of these models represent difference country codes.

Model UVCA200 and model UVCA100 are the same except for the difference in power and number of light sources and the electric constructions of these models are identical. There is no other difference except the name of the models.

Full EMC tests were carried out on model UVCA200.

The product fulfils the requirements of:

CISPR 14-1:2016, CISPR 14-2:2015, IEC 61000-3-2:2018, IEC 61000-3-3:2013+A1:2017
EN 55014-1:2017, EN 55014 -2:2015, EN 61000-3 -2:2019, EN 61000-3-3:2013+A1:2019

1.1 Product Function

Refer to the operation instruction.

1.2 Ratings and System Details

Details see 6.1 Nameplate.

1.3 Independent Operation Modes

The basic operation modes are:

1. On
2. Off

1.4 Submitted Documents

Operating Instructions and Installation Manual
Structural Parts
Rating Label
Wiring Diagram
Construction Drawing
Photographs of EUT
Material Bill (Parts List)

2. Test Sites

2.1 Test Facilities

The tests and measurements refer to this report were performed by EMC testing Lab. of Vkan Certification & Testing Co., Ltd. .

Add.: No.3, Tiantaiyi Road, Kaitai Avenue, Science City, Guangzhou, 510663, P. R. China
Telephone : +86-20-32293888
Fax : +86-20-32293889

The EMC testing laboratory has been recognized by CNAS, and authorized by Nemko of Norway since 1997, and accredited by DAkkS of Germany since 2007, and assessed and found eligible to participated in the TDAP of VDE testing and certification Institute since 2004, and registered by FCC since 2001.

2.2 Description of Non-standard Method and Deviations

The testing and measurement methods used in this report are applied by all standard methods. Not any non-standard method or deviation from the used standards was used.

2.3 List of Test and Measurement Instruments

Refer to **Appendix A**.

3. Test Set-up and Operation Modes

3.1 Principle of Configuration Selection

Emission: The equipment under test (EUT) was configured to measure its highest possible radiation level. The test modes were adapted accordingly in reference to the Operating Instructions.

Immunity: The equipment under test (EUT) was configured to the representative operating mode and conditions.

3.2 Physical Configuration For Testing

Refer to relative descriptions in this test report.

3.3 Test Operation Mode and Test Software

Refer to **Test Setup** in clause 4 and clause 5.

3.4 Special Accessories and Auxiliary Equipment

None.

3.5 Countermeasures to Achieve EMC Compliance

None.

4. Emission Test Results

4.1 Emission in Radio Frequency Range

4.1.1 Continuous Disturbance Voltage

RESULT : **Pass**

Test Setup

Test procedure	:	EN 55014-1:2017
Frequency range	:	0.15~30MHz
Limits	:	EN 55014-1:2017, clause 4.3.3.2, table 5
Test Site	:	Shielding Room;
Artificial Hand	:	Not applied
Voltage Probe	:	Not applied
Earthing	:	Applied

The GRP (Ground Reference Plate) is 2m×3m.

The EUT was placed on a wooden support, 0.1m high, standing on the GRP, at a distance of 0.8m from artificial mains V-network, to simulate the really situation.

The EUT was kept more than 0.8m from any other earthed conducting surface.

Test Conditions

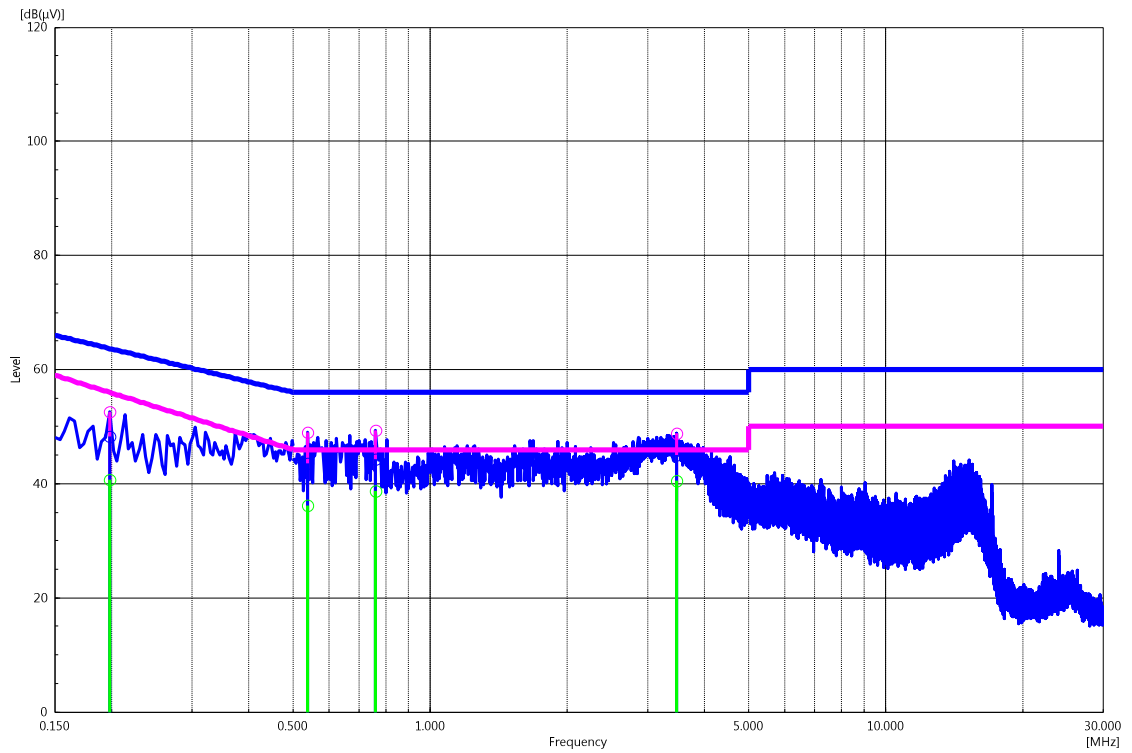
Ambient Temperature : 22 °C/ 22°C (Before Test /After Test);
 Relative Humidity : 54 %/ 54% (Before Test /After Test);
 Mains voltage determined
 at 160 kHz : 230 V/ 50 Hz;
 Operating Mode of the EUT : High wind and disinfection.

Continuous Disturbance Voltage						
Port: AC Power Line(L line)						
Freq. (MHz)	QP Reading (dBμV)	QP Limits (dBμV)	AV Reading (dBμV)	AV Limits (dBμV)	QP Margin (dB)	AV Margin (dB)
0.198	48.3	63.7	40.7	56.0	15.4	15.3
0.540	43.6	56.0	36.2	46.0	12.4	9.8
0.760	44.4	56.0	38.8	46.0	11.6	7.2
3.476	44.9	56.0	40.6	46.0	11.1	5.4
/	/	/	/	/	/	/
/	/	/	/	/	/	/
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Note:

- Where PK reading is less than relevant limit decrease 25dB, the QP reading and AV reading will not be recorded.
- Where QP reading is less than relevant AV limit, the AV reading will not be measured.
- The measurement uncertainty for mains terminal disturbance voltage from 150kHz to 30MHz: 3.460dB.
- The most critical operation mode test results are recorded in this test report.

Scan Graph and Scan Settings



Test Conditions

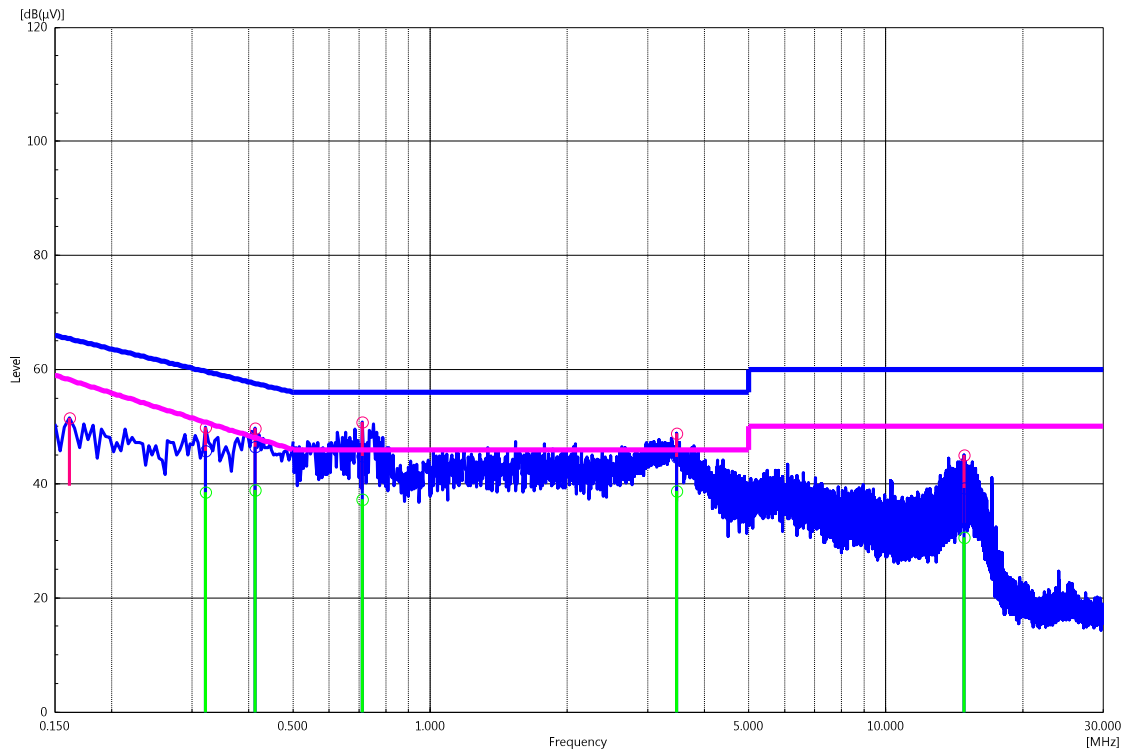
Ambient Temperature : 22 °C/ 22°C (Before Test /After Test);
 Relative Humidity : 54 %/ 54% (Before Test /After Test);
 Mains voltage determined
 at 160 kHz : 230 V / 50 Hz ;
 Operating Mode of the EUT : High wind and disinfection.

Continuous Disturbance Voltage						
Port: AC Power Line(N line)						
Freq. (MHz)	QP Reading (dBμV)	QP Limits (dBμV)	AV Reading (dBμV)	AV Limits (dBμV)	QP Margin (dB)	AV Margin (dB)
0.322	45.8	59.7	38.4	50.8	13.9	12.4
0.414	46.4	57.6	38.9	48.0	11.2	9.1
0.712	44.9	56.0	37.3	46.0	11.1	8.7
3.476	44.7	56.0	38.7	46.0	11.3	7.3
14.916	39.2	60.0	30.6	50.0	20.8	19.4
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Note:

- Where PK reading is less than relevant limit decrease 25dB, the QP reading and AV reading will not be recorded.
- Where QP reading is less than relevant AV limit, the AV reading will not be measured.
- The measurement uncertainty for mains terminal disturbance voltage from 150kHz to 30MHz: 3.460dB.
- The most critical operation mode test results are recorded in this test report.

Scan Graph and Scan Settings



4.1.2 Disturbance Power

RESULT : **Pass**

Test Setup

Test procedure	:	EN 55014-1:2017
Frequency range	:	30 ~ 300MHz
Limits	:	EN 55014-1:2017 clause 4.3.4.4, table 7
Test Site	:	Shielding Room
Artificial Hand	:	Not applied
Earthing	:	Applied

The EUT was placed on a wooden fence of 0.1m high and kept at least 0.8m from other metallic objects, to simulate the really situation.

The power cord had been stretched in a straight line laying horizontal on the clamp track to a length of 6m and routed through an absorber clamp. The clamp was moved along the cable to find the maximum emission.

Test Conditions

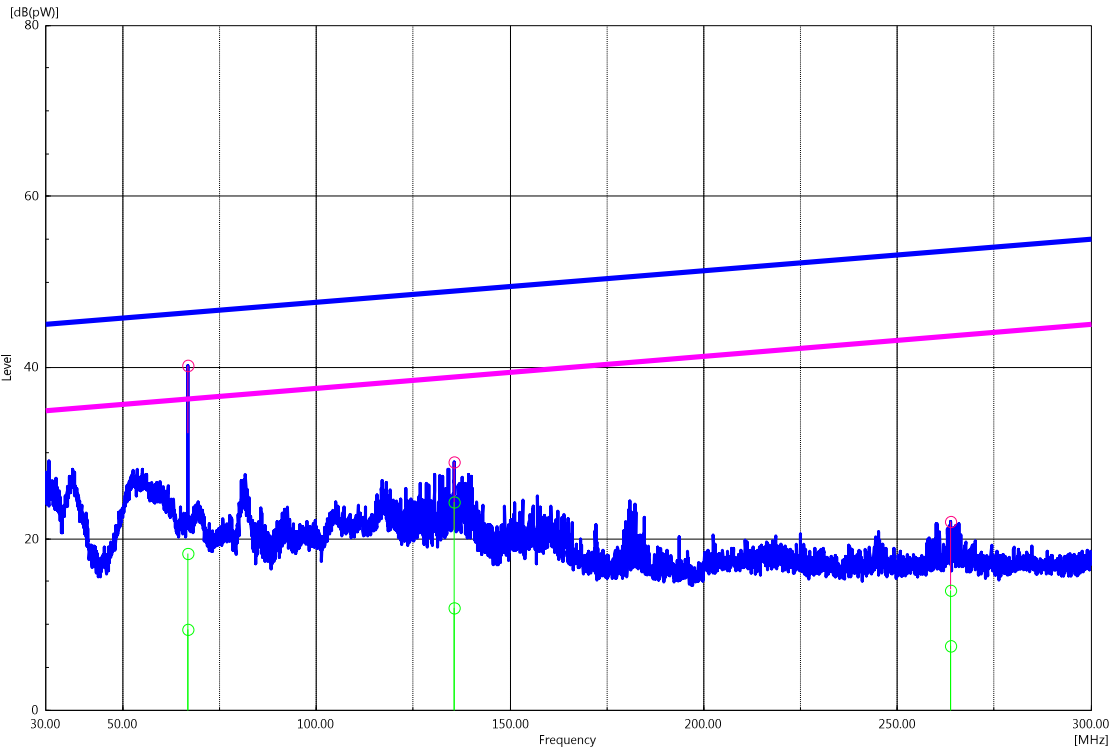
ient Temperature : 21 °C/ 21°C (Before Test /After Test);
 Relative Humidity : 55 %/ 55 %(Before Test /After Test);
 Mains voltage determined
 at 160 kHz : 230 V / 50 Hz;
 Operating Mode of the EUT : High wind and disinfection.

Disturbance Power								
Port: AC Power Line								
Freq. (MHz)	QP Reading (dBpW)	QP Limits (dBpW)	QP Margin (dB pW)	Minimum QP Margin (dB pW)	AV Reading (dBpW)	AV Limits (dBpW)	QP Margin (dB)	AV Margin (dB)
66.780	18.3	46.4	/	/	9.4	36.4	28.1	27.0
135.580	24.2	48.9	/	/	12.0	38.9	24.7	26.9
263.780	14.0	53.7	/	/	7.6	43.7	39.7	36.1
200~300	/	/	>15	0~10	/	/	/	/
/	/	/	/	/	/	/	/	/
/	/	/	/	/	/	/	/	/
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Note:

- Where PK reading is less than relevant limit decrease 25dB, the QP reading and AV reading will not be recorded.
- Where QP reading is less than relevant AV limit, the AV reading will not be measured.
- The measurement uncertainty for disturbance power from 30MHz to 300MHz: 4.072dB.
- The most critical operation mode test results are recorded in this test report.

Scan Graph and Scan Settings



4.1.3 Radiated Disturbance (30MHz~1000MHz)

RESULT : **N/A**

Remark:

Additional margin (200MHz to 300MHz) meets the margin requirement in 4.1.2 disturbance power table.

4.1.4 Discontinuous Disturbance

RESULT : **Pass**

Test Setup

Test procedure	:	EN 55014-1: 2017
Frequency range	:	0.15 ~ 30MHz
Limits	:	EN 55014-1: 2017, clause 4.4
Test Site	:	Shielding Room
Artificial Hand	:	Not applied
Earthing	:	Applied

The GRP (Ground Reference Plate) is 2m×3m.

The EUT was placed on a wooden support, 0.1m high, standing on the GRP, at a distance of 0.8m from artificial mains V-network, to simulate the really situation.

The EUT was kept more than 0.8m from any other earthed conducting surface.

The First Test:**Test Conditions**

Ambient Temperature : 22 °C / 22 °C (Before Test/After Test);
 Relative Humidity : 54 % / 54 % (Before Test/After Test);
 Power Supply : 230 V / 50 Hz;
 Operating Mode of the EUT : High wind and disinfection.

Frequency	150 kHz	500 kHz	1.4 MHz	30 MHz
Attenuation (dBμV)	66	56	56	60
Short Clicks (<10ms)	0	0	0	0
Middle Clicks (10ms-20ms)	0	0	0	0
Long Clicks (20ms-200ms)	0	0	0	0
Continuous Disturbance	0	0	0	0
Switching Operation	/			
Factor: f	1.0			
Observation Time: T(min)	120			
Click Rate: N	0	0	0	0
Limit: L _q (dBμV)	/	/	/	/
Permitted Clicks Exceeding L _q	/	/	/	/

☒ Because the click rate is not more than 5, none of the caused clicks has a duration longer than 20ms, 90% of the caused clicks have a duration less than 10ms. According to EN 55014-1:2017, the appliance fulfilled the conditions, so it is complied with the limits.

4.2 Emission on AC Mains

4.2.1 Harmonics on AC Mains

RESULT : **Pass**

Test Setup

Test procedure : EN 61000-3-2:2019
Measured harmonics : 2 ~ 40th
Equipment Class : A
Limits : EN 61000-3-2:2019, clause 7.1, Table 1

Test Conditions:Ambient Temperature : 22 °C/ 22°C (Before Test/After Test);Relative Humidity : 56 %/ 56 % (Before Test/After Test);Power Supply : 230 V / 50 Hz;Operating Mode of the EUT : High wind and disinfection.

Measurement type: Class A

Harm#	Harms(avg)	100%Limit	%of Limit	Harms(max)	150%Limit	%of Limit	Status
2	0.002	1.080	N/A	0.002	1.620	N/A	Pass
3	0.079	2.300	3.4	0.081	3.450	2.3	Pass
4	0.001	0.430	N/A	0.001	0.645	N/A	Pass
5	0.037	1.140	3.2	0.037	1.710	2.2	Pass
6	0.001	0.300	N/A	0.001	0.450	N/A	Pass
7	0.014	0.770	1.8	0.015	1.155	1.3	Pass
8	0.001	0.230	N/A	0.001	0.345	N/A	Pass
9	0.003	0.400	N/A	0.003	0.600	N/A	Pass
10	0.001	0.184	N/A	0.001	0.276	N/A	Pass
11	0.005	0.330	1.6	0.005	0.495	1.1	Pass
12	0.001	0.153	N/A	0.001	0.230	N/A	Pass
13	0.008	0.210	3.6	0.008	0.315	2.5	Pass
14	0.001	0.131	N/A	0.001	0.197	N/A	Pass
15	0.008	0.150	5.0	0.008	0.225	3.5	Pass
16	0.001	0.115	N/A	0.001	0.173	N/A	Pass
17	0.005	0.132	4.1	0.006	0.198	2.9	Pass
18	0.001	0.102	N/A	0.001	0.153	N/A	Pass
19	0.006	0.118	5.4	0.007	0.178	3.7	Pass
20	0.001	0.092	N/A	0.001	0.138	N/A	Pass
21	0.008	0.107	7.4	0.008	0.161	5.1	Pass
22	0.001	0.084	N/A	0.001	0.125	N/A	Pass
23	0.006	0.098	6.2	0.006	0.147	4.3	Pass
24	0.002	0.077	N/A	0.002	0.115	N/A	Pass
25	0.004	0.090	N/A	0.005	0.135	N/A	Pass
26	0.001	0.071	N/A	0.001	0.107	N/A	Pass
27	0.005	0.083	N/A	0.005	0.125	N/A	Pass
28	0.001	0.066	N/A	0.001	0.099	N/A	Pass
29	0.004	0.078	N/A	0.004	0.116	N/A	Pass
30	0.001	0.061	N/A	0.001	0.092	N/A	Pass
31	0.002	0.073	N/A	0.002	0.109	N/A	Pass
32	0.001	0.058	N/A	0.001	0.086	N/A	Pass
33	0.002	0.068	N/A	0.002	0.102	N/A	Pass
34	0.001	0.054	N/A	0.001	0.081	N/A	Pass
35	0.003	0.064	N/A	0.003	0.096	N/A	Pass
36	0.001	0.051	N/A	0.001	0.077	N/A	Pass
37	0.004	0.061	N/A	0.004	0.091	N/A	Pass
38	0.000	0.048	N/A	0.001	0.073	N/A	Pass
39	0.003	0.058	N/A	0.003	0.087	N/A	Pass
40	0.001	0.046	N/A	0.001	0.069	N/A	Pass

4.2.2 Voltage Fluctuations on AC Mains

RESULT : **Pass**

Test Setup

Test procedure : EN 61000-3-3:2013+A1:2019
Limits : EN 61000-3-3:2013+A1:2019, Clause 5

Test Conditions

Ambient Temperature : 22°C / 22 °C (Before Test/After Test);
Relative Humidity : 56 % / 56% (Before Test/After Test);
Power Supply : 230 V / 50 Hz;
Operating Mode of the EUT : High wind and disinfection.

Voltage Fluctuation	Limit	Value
Relative Voltage Change Characteristic d(t)	500ms	0 ms
Maximum Relative Voltage Change dmax	4%	/
	6%	-0.05%
	7%	/
Relative Steady-state Voltage Change dc	3.3%	0%

Flicker	Limit	Value
Short-term Flicker Indicator Pst	1.0	0.159
Long-term Flicker Indicator Plt	0.65	0.069

5. Immunity Test Results

5.1 Classification of Apparatus and Performance Criteria

5.1.1 Classification of Apparatus

The EUT contains electronic control circuit, and the frequency of the oscillator is less than 15MHz. According to the clause 4.1 of EN 55014-2:2015 EUT is a category II appliance.

5.1.2 Performance Criteria

Performance Criteria A

The EUT shall continue to operate as intended during the test.

No degradation of Performance or loss of function is allowed below a performance level (or permissible loss of performance) specified by the manufacturer, when the EUT is used as intended. If the minimum performance level or permissible performance loss is not specified by the manufacturer, then either of these may be derived from the product description and documentation, and from what the user may reasonably expect from the EUT if used as intended.

Performance Criteria B

The EUT shall continue to operate as intended after the test.

No degradation of Performance or loss of function is allowed below a performance level (or permissible loss of performance) specified by the manufacturer, when the EUT is used as intended. During the test, degradation of performance is allowed, however. No change of actual operating state or stored data is allowed. If the minimum performance level or permissible performance loss is not specified by the manufacturer, then either of these may be derived from the product description and documentation, and from what the user may reasonably expect from the EUT if used as intended.

Performance Criteria C

Temporary loss of function is allowed, provided the function is self-recoverable or can be restored by the operation of controls, or by any operation specified in the instruction for use.

5.2 Immunity Tests

5.2.1 ESD Immunity Test

RESULT : **Pass**

Test Setup

Test procedure : EN 61000-4-2:2009

The GRP is 2m×2m and projects beyond the EUT at least 0.5m on each side.
The distance between the EUT and all other conductive structures was more than 0.5m.
The EUT was placed on a wooden support, 0.1m thick, above the GRP.

20 single discharges (10 positive and 10 negative) were applied to each selected point.
Indirect discharge was applied to HCP with the ESD generator positioned vertically at a distance of 0.1m from the EUT, and to VCP which was placed at a distance of 0.1m from the EUT.

Test Conditions

Ambient Temperature : 22°C / 22 °C (Before Test/After Test);
Relative Humidity : 53% / 53% (Before Test/After Test);
Power Supply : 230 V / 50 Hz;
Operating Mode of the EUT : High wind and disinfection.

Item	Point of Discharge	Applied Voltage	Performance Criterion	Result
Contact Discharge	Metallic part of The EUT	+4kV	B	Pass
		-4kV		Pass
	/	/		/
		/		/
Indirect Discharge to HCP	/	/	B	/
		/		/
Indirect Discharge to VCP	Around the EUT	+4kV	B	Pass
		-4kV		Pass
Air Discharge	Control panel	+8kV	B	Pass
		-8kV		Pass
	Around the EUT	+8kV		Pass
		-8kV		Pass

Remark:

The EUT operated as intended during and after the test.

5.2.2 RF EM-Fields Immunity Test**RESULT : N/A****Remark:**

Because the EUT belongs to category II appliance, this test item was not applied.

5.2.3 EFT/B Immunity Test**RESULT : Pass****Test Setup**

Test procedure : EN 61000-4-4:2012

The GRP is 2m×2m and projects beyond the EUT at least 0.1m on each side.

The EUT was placed on a wooden support, 0.1m thick, above the GRP.

The distance between the EUT and all other conductive structures was more than 0.5m.

The duration of each test was 2 minutes.

Test conditionsAmbient Temperature : 22°C / 22 °C (Before Test/After Test);Relative Humidity : 52% / 52% (Before Test/After Test);Power Supply : 230 V / 50 Hz;Operating Mode of the EUT : High wind and disinfection.

Coupling Ports		Coupling Voltage	Repetition Rate	Performance Criterion	Result
AC Power Port	L+ N	+1kV	5kHz	B	Pass
		-1kV			Pass
DC Power Port		/	/		/
Communication Port Signal/Control Line		/	/		/

Remark:

The EUT operated as intended during and after the test.

5.2.4 Surge Immunity Test

RESULT : **Pass**

Test Setup

Test procedure : EN 61000-4-5:2014

The power cords between the EUT and the CDN were no more than 2m in length.
2Ω effective output impedance of the generator was used for L-N test.

12Ω effective output impedance of the generator was used for L-PE, N-PE test.

5 positive and 5 negative surges were applied successively synchronized to the voltage phase at 90°, 270° to L-N, L-PE, N-PE respectively. The repetition rate was 1 per minute.

Test Conditions

Ambient Temperature : 22°C / 22 °C (Before Test/After Test);

Relative Humidity : 52% / 52% (Before Test/After Test);

Power Supply : 230 V / 50 Hz;

Operating Mode of the EUT : High wind and disinfection.

Coupling Port	Coupling voltage	Performance Criterion	Coupling Phase/Result	
			90°	270°
AC Power Port L-N	+1kV	B	Pass	/
	-1kV		/	Pass
AC Power Port L-PE	+2kV	B	/	/
	-2kV		/	/
AC Power Port N-PE	+2kV	B	/	/
	-2kV		/	/

Remark:

The EUT operated as intended during and after the test.

5.2.5 Injected Currents Immunity Test

RESULT : **Pass**

Test Setup

Test procedure : EN 61000-4-6:2014

The GRP is 2m×1m and projects beyond the EUT at least 0.1m on each side.

The EUT was placed on a wooden support, 0.1m thick, above the GRP.

The distance between the EUT and all other conductive structures was more than 0.5m.
The CDNs or the EM-clamp was placed at a distance between 0.1m and 0.3m from the projected geometry of the EUT on the GRP.

Test Conditions

Ambient Temperature : 22°C / 22 °C (Before Test/After Test);
Relative Humidity : 54% / 54% (Before Test/After Test);
Power Supply : 230 V / 50 Hz;
Operating Mode of the EUT : High wind and disinfection.

Coupling Ports	Voltage (r.m.s)	Frequency Range	Dwell Time	Modulation	Performance Criterion	Result
AC Power Port	3V	0.15~230MHz	3s	1kHz	A	Pass
DC Power Port	/		/	AM80%		/
Signal / Control Lines	/		/	sine wave		/

Remark:

The EUT operated as intended during and after the test.

5.2.6 Voltage Dip and Short Interruption Immunity Test

RESULT : **Pass**

Test Setup

Test procedure : EN 61000-4-11:2004

The interval between each dip/interruption was 10 s.

Test Conditions

Ambient Temperature : 22°C / 22 °C (Before Test/After Test);
 Relative Humidity : 56% / 56% (Before Test/After Test);
 Power Supply : 230 V / 50 Hz ;
 Operating Mode of the EUT : High wind and disinfection .

Item	Test Level	Phase	Duration (periods in the rated frequency)	Test Numbers	Performance Criterion	Result
Short Interruption	100%U _T	0°	0.5	3	C	Pass
	→0%U _T	180°	0.5	3		Pass
	/	0°	/	/		/
		180°	/	/		/
Voltage Dip	100%U _T	0°	10	3		Pass
	→40%U _T	180°	10	3		Pass
	100%U _T	0°	25	3		Pass
	→70%U _T	180°	25	3		Pass

Remark:

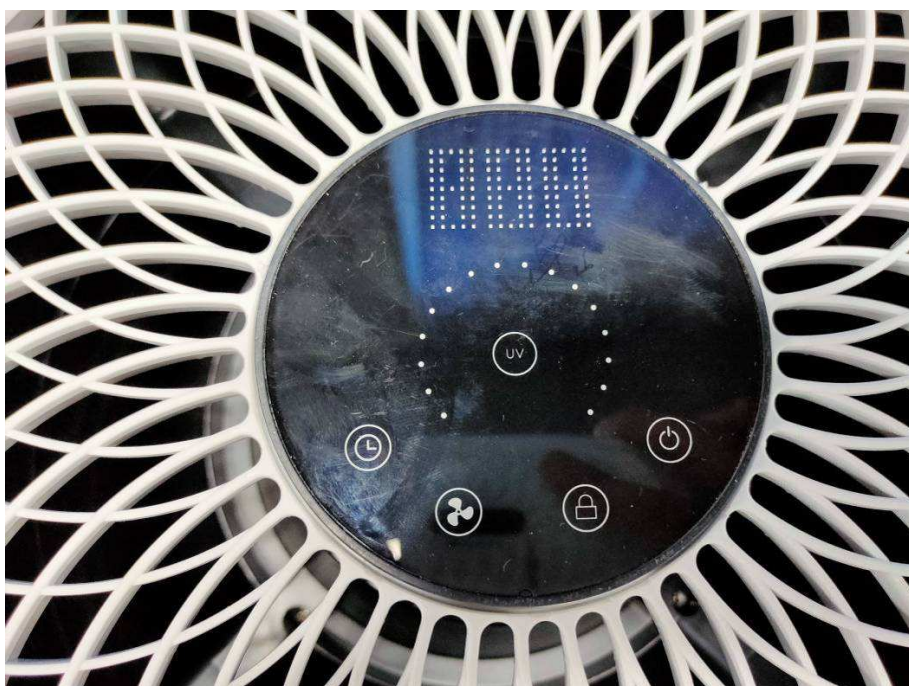
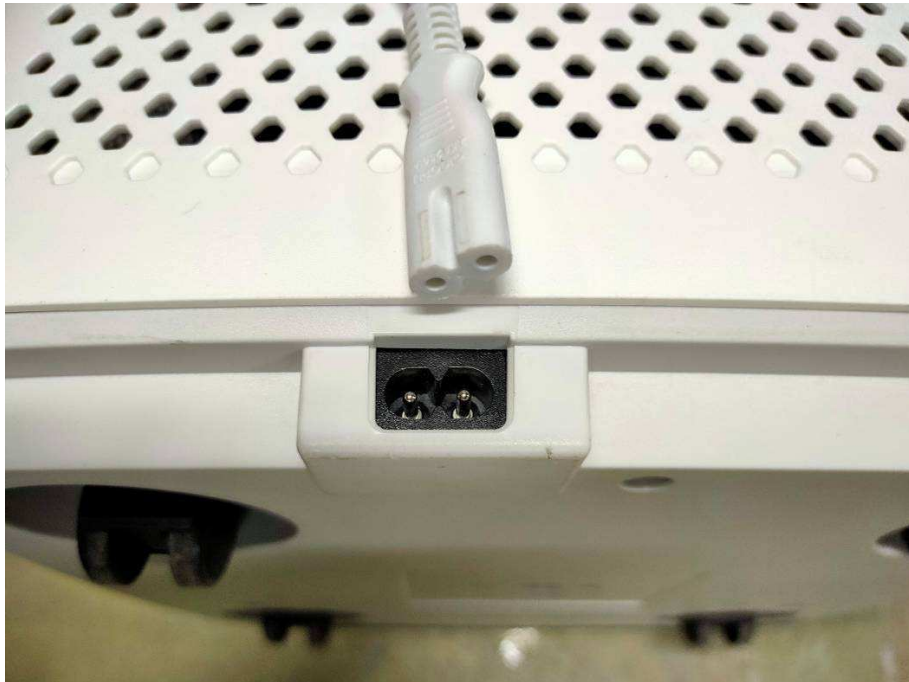
The EUT operated as intended during and after the test.

6. Photographs & Nameplates of the EUT

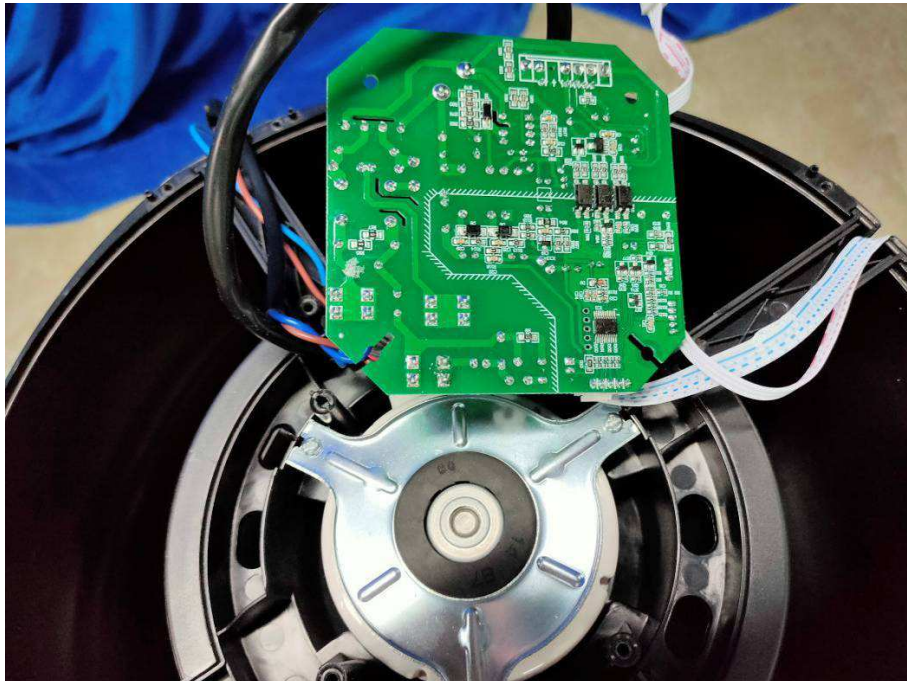
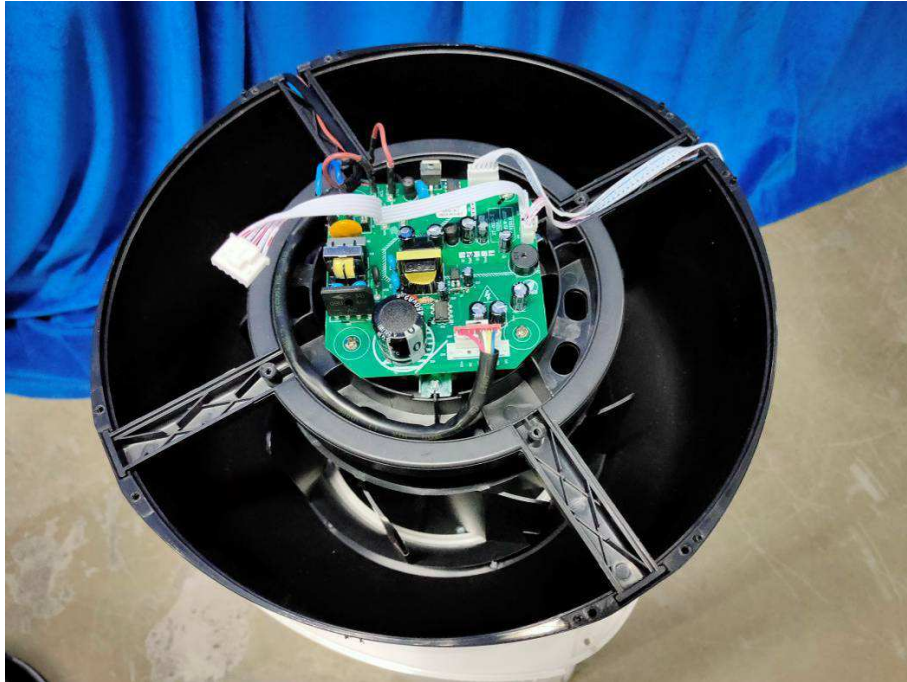
6.1 Outlook of the EUT:

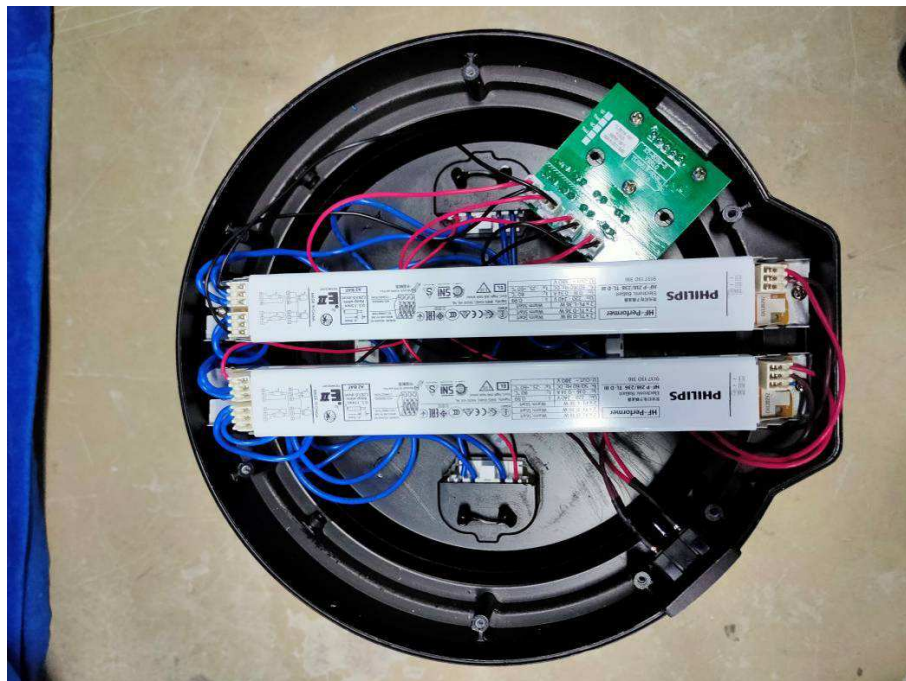
Model UVCA200

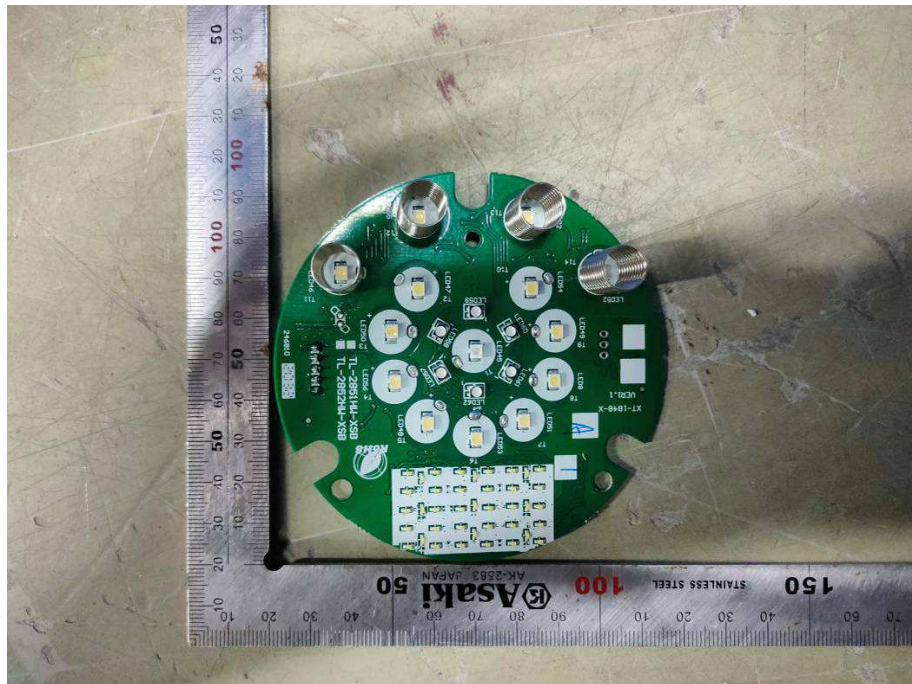


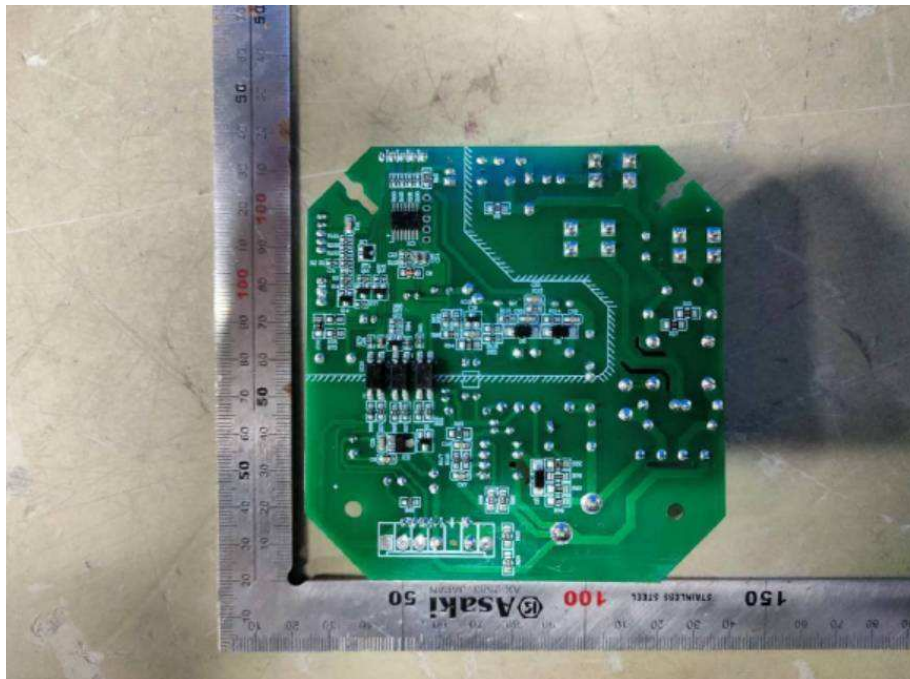
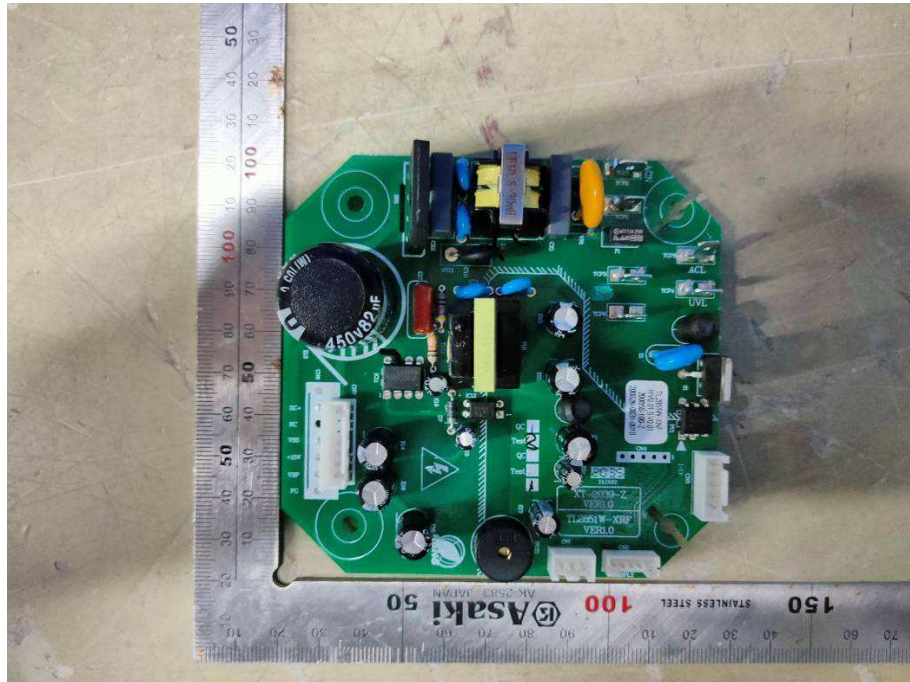


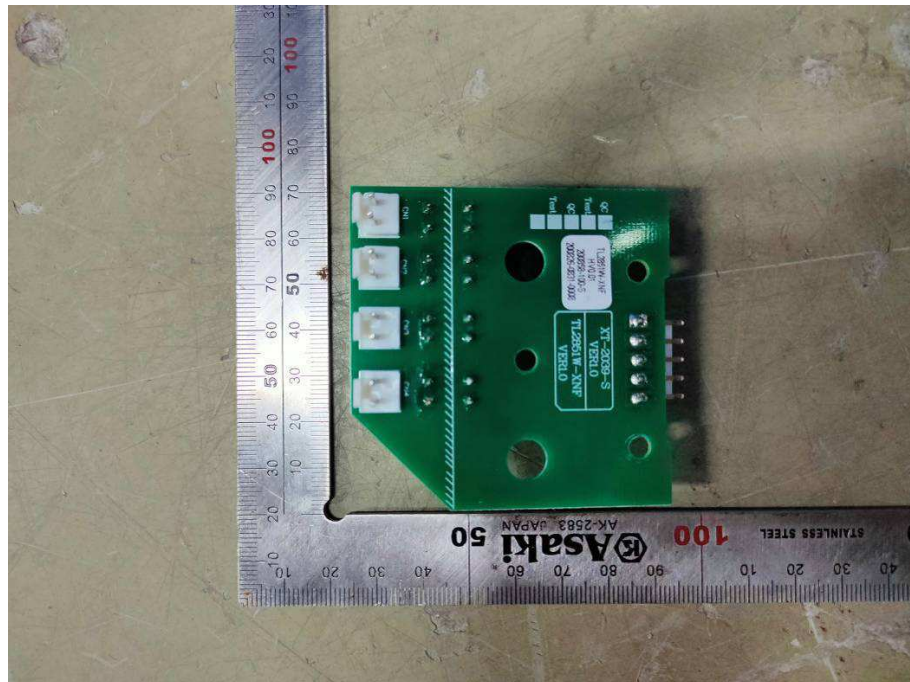
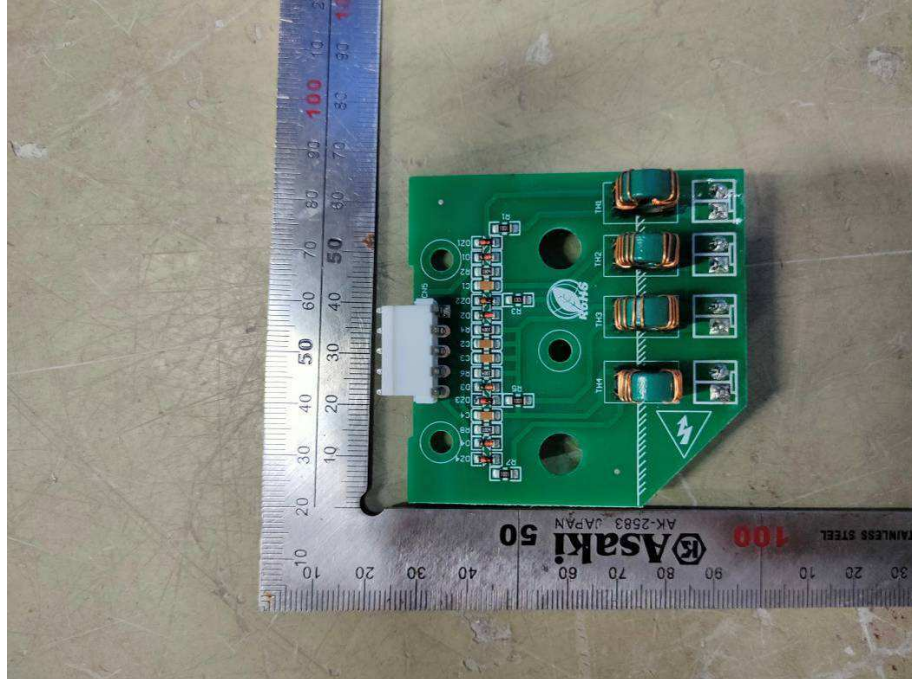
6.2 Structure of internal wires:











7. Photograph of the test setup

Continuous Disturbance Voltage



Disturbance Power



Discontinuous Disturbance



Harmonics and Flick, Voltage Dips



ESD



EFT& Surge



Injected Current



Appendix A

Test Equipment	Type/Mode	SERIAL NO.	Equipment No.	Manufacturer	Cal. Due	using
Conducted emission					/	/
EMI Test Receiver	ESI26	834000/009	EM-0087	R&S	2021-03-15	✓
EMI Test Receiver	ESR3	102394	VG DY-0705	R&S	2021-03-15	
LISN	NSLK 8127	8127644	VG DY-0150	SCHWARZBECK	2020-11-08	
LISN	NSLK 8128	8128-316	VG DY-0149	SCHWARZBECK	2020-11-08	✓
DC LISN	PVDC8301-017	PVDC8301#17	VG DY-0692	SCHWARZBECK	2021-06-09	
LISN	NSLK 8129	8129-268	EM-000388	SCHWARZBECK	2021-03-11	
Plus Limiter	VTSD 9561 F-N	00515	VG DY-0808	SCHWARZBECK	2021-03-11	✓
Plus Limiter	37-10-34	CF3049	EM-000503	AEROFLEX	2020-11-08	
Impedance Stabilization Network	ISN T800	27095	WKNE-0195	TESEQ	2020-11-08	
Impedance Stabilization Network	NTFM8158	8158-0092	VG DY-0356	SCHWARZBECK	2021-06-09	
Impedance Stabilization Network	NTFM8131	#184	EM-000498	SCHWARZBECK	2021-06-09	
Voltage Probe	TK9420	9420-499	VG DY-0128	SCHWARZBECK	2021-03-11	
Power Divider	4901.17.B	22643830	DB-0016	HUBER+SUHNER	2020-11-08	
Video Signal Generator	GV-798+	151064920001	VGDS-0215	PROMAX	2021-07-21	
Audio Signal Generator	GAG-810	EK871591	EM-000309	GW	2021-12-11	
Shielding Room(#1)	GP1A	002	WKNF-0001	LEINING	2024-08-08	✓
Shielding Room(#2)	GP1A	/	WKNF-0006	LEINING	2024-08-08	
Radiation emission					/	/
EMI Test Receiver	N9038A-508	MY532290079	EM-000397	Agilent	2021-03-15	
EMI Test Receiver	ESR3	102084	VG DY-0569	R&S	2021-03-15	
EMI Test Receiver	N9038A-508	MY53290078	EM-000396	Agilent	2021-03-15	
Broadband Antenna(3m)	VULB 9163	9163-530	EM-000342	SCHWARZBECK	2021-07-11	
Broadband Antenna(5m)	VULB 9163	9163-676	EM-000382	SCHWARZBECK	2021-05-10	
Broadband Antenna(10m)	VULB 9163	9163-675	EM-000381	SCHWARZBECK	2021-07-11	
Broadband Antenna(10m)	HL562E	101121	EM-000566	R&S	2021-04-28	
Loop Antenna	HLA 6121	540046	EM-000546	TESEQ	2021-06-28	
Loop Antenna	FMZB1513	1513-170	EM-000384	SCHWARZBECK	2021-04-03	
Monopole antenna	VAMP9243	9243226	EM-000183	SCHWARZBECK	2021-04-03	
Waveguide Horn Antenna	BBHA9120B	602	EM-000383	SCHWARZBECK	2021-03-15	
Waveguide Horn Antenna	HF906	360306/008	WKNA-0024-8	R&S	2021-03-15	
Semi-Anechoic Chamber(3m)	FACT-4	ST08035	WKNA-0024	ETS	2024-12-12	
Semi-Anechoic Chamber(5m)	SAC-5	SAC-5-2.0	EM-000557	COMTEST	2024-11-02	
Semi-Anechoic Chamber(10m)	10m-SAC	P25904	EM-000460	Albatross	2024-06-30	
Disturbance power					/	/
EMI Test Receiver (#1)	ESI26	834000/009	EM-0087	R&S	2021-03-15	✓
Absorbing Clamp	MDS21B	48052	VG DY-0689	TESEQ	2021-04-07	✓
Intermittent interference					/	/
Click Analyzer	DDA55	14041630071	EM-000527	AFJ	2021-06-09	✓
LISN (CLICK)	LS-16C	16011624394	EM-000528	AFJ	2021-06-09	✓
CDN radiation substitution					/	/
EMI Test Receiver	ESR3	102394	VG DY-0705	R&S	2021-03-15	
CDN	M016	26143	EM-000300	TESEQ	2021-06-09	
CDNE	CDNE M2	CDNE-M2-020	VG DY-0291	SCHWARZBECK	2021-06-09	
CDNE	CDNE M3	CDNE-M3-017	VG DY-0292	SCHWARZBECK	2021-03-15	
Plus Limiter(6dB)	1W6	93459	EM-000499	Aeroflex	2020-12-11	
Three loop antenna					/	/
EMI Test Receiver	ESR3	102394	VG DY-0705	R&S	2021-03-15	
Three Loop Antenna	HXYZ9170	9170-232	VGDS-0085	SCHWARZBECK	2021-03-15	

Test Equipment	Type/Mode	SERIAL NO.	Equipment No.	Manufacturer	Cal. Due	using
Harmonics, voltage flicker, voltage drop test system					/	/
45kVA three-phase harmonic voltage scintillating voltage sags test system	NSG1007	1404A01259	VGDS-0116	TESEQ	2021-03-15	√
Immunity to conducted disturbances induced by RF fields					/	/
C/S test generator	CDG 6000	126A1422/2016	K014	SCHLODER	2021-06-09	√
CDN(single phase)	M016S	33519	VGDS-0093-2	TESEQ	2020-11-09	√
CDN(Three phase)	M532	31829	CGDS-0093-1	TESEQ	2021-03-11	
EM Injected Clamp	EM101	3-5339	K-0041-7	LIITNI	2021-03-15	
ATT(6dB)	59-6-33	SQ914	EM-000551	Weinschel	2021-03-11	√
Low frequency RF field induced conduction disturbance immunity					/	/
Power signal generator	PSG300	124B1220	VGDS-0190	FRANKONIA	2021-06-09	
Power signal generator	PSGE300	133A1108	VGDS-0190	FRANKONIA	2021-06-09	
Coupling network	CDN M2345-32	124CN1106	VGDS-0190	FRANKONIA	2021-06-09	
Surge and EFT test system					/	/
Surge and EFT generator	NSG3060	1376	VGDS-0014	TESEQ	2021-03-11	√
Surge and EFT CDN	CDN3063	1994	VGDS-0014	TESEQ	2021-03-11	√
Signal Line coupling network	CDN117	140	DC-0004-2	SCHAFFNER	2021-01-09	
Signal Line coupling network	CDN118	192	EM-000530	SCHAFFNER	2021-01-09	
Capacitive-coupling	CDN8014	32799	EM-000337-4	TESEQ	2020-11-09	
Radio frequency electromagnetic field radiation immunity					/	/
Signal generator (Below 1G)	E4432B	MY43350242	VG DY-0222	Agilent	2020-12-10	
Signal generator (Above 1G)	N5172B	MY53051933	VG DY-0591	Agilent	2021-01-03	
Power amplifier (Below 1G)	CBA 9413A	9906	EM-000563	HAFFNER	2021-06-09	
Power amplifier (Below 1G)	NTWPA-106010	18093197	VG DY-0804	RFLIGHT	2021-01-03	
LPDA	STLP 9128E	9128E-052	EM-000561	SCHWARZBEC	2021-06-09	
Horn Antenna	STLP 9149	390	EM-000375	SCHWARZBEC	2021-07-25	
Power meter	4232A	41001	EM-000033	BOONTON	2020-12-05	
Electrostatic discharge					/	/
ESD Generator	ONYX	182795	VG DY-0587	HAEFELY	2021-07-15	
ESD Generator	NSG438	996	NA-0091	TESEQ	2020-12-11	√
Power Frequency Magnetic Field					/	/
Power frequency magnetic field generator	EMS61000-8K	11030001	EM-000332	EVERFINE	2021-06-09	
Ring wave					/	/
Signal Generator	HOCS	145001	VG DY-0304	HTEC	2021-06-11	
Coupling network	SCDN	145002	VG DY-0305	HTEC	2021-06-11	
EMF					/	/
EMF Protection Network	VDHH9502	9502-036	EM-000341	SCHWARZBEC K	2020-11-08	
Electromagnetic Radiation Tester	ELT-400	D-0007/M-0194	KA-0101	NARDA	2021-05-19	

End of Document