

Report No.: 18220WC30243503S

Test Report

Applicant : **Shenzhen Intellirocks Tech Co., Ltd.**

Address : **No. 2901-2904, 3002, Block C, Section 1,
Chuangzhi Yuncheng Building, Liuxian
Avenue, Xili Community, Xili Street, Nanshan
District, Shenzhen**

Product Name : **Govee Smart LED Bulb**

Date : **Jan. 04, 2024**



Shenzhen Anbotek Compliance Laboratory Limited

Shenzhen Anbotek Compliance Laboratory Limited

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400-003-0500

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TEST REPORT
IEC 62560
Self-Ballasted LED-Lamp
for general lighting services by voltage > 50V Safety specifications

Report

Report reference No.: 18220WC30243503S

Compiled by: Otto Guo

Approved by: Jeff Zhu

Date of issue: Jan. 04, 2024

Contents: 26 pages report

*Otto Guo**Jeff Zhu***Testing laboratory**

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Testing location: Location 1: 1/F, Building D, Sogood Science and Technology Park, Sanwei community, Hangcheng Street, Bao'an District, Shenzhen, Guangdong, China.

Location 2: Zone B, 1/F., Building 2, Hengchangrong High-Tech Industrial Park, Huangtian, Hangcheng Street, Bao'an District, Shenzhen, Guangdong, China.

Applicant

Name: Shenzhen Intellirocks Tech Co., Ltd.

Address: No. 2901-2904, 3002, Block C, Section 1, Chuangzhi Yuncheng Building, Liuxian Avenue, Xili Community, Xili Street, Nanshan District, Shenzhen

Manufacturer

Name: Shenzhen Intellirocks Tech Co., Ltd.

Address: No. 2901-2904, 3002, Block C, Section 1, Chuangzhi Yuncheng Building, Liuxian Avenue, Xili Community, Xili Street, Nanshan District, Shenzhen

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检测

Test specification

Standard: IEC 62560:2011+A1: 2015

Test procedure: Type test

Non-standard test method.....: N/A

Test item Description

Product name: Govee Smart LED Bulb

Trademark.....: Govee

Model and/or type reference: H6004

Rating(s): AC220-240V, 50Hz, 0.065A, 9W, E27 and B22 lamp Cap

Ta: 40°C, 2700-6500K, 800lm

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

Testing

Date of receipt of test item : Nov. 15, 2023

Date(s) of performance of tests : Nov. 15, 2023 to Nov. 22, 2023

General remarks

This test report shall not be reproduced except in full without the written approval of the testing laboratory.

The test results presented in this report relate only to the item tested.

“(see remark #)” refers to a remark appended to the report.

“(see appended table)” refers to a table appended to the report.

Copy of marking plate(s)

Govee Smart LED Bulb Model: H6004 ta: 40°C
Input: AC 220-240V 0.065A 50Hz Power: 9W
2700-6500K 800lm E27 SN:
 GOVEE MOMENTS (DE) HANDEL GmbH
(E-mail: eu_rep@govee.com) Zunftstraße 13 - Raum
205, 50374 Erftstadt, Germany
Shenzhen Intellirocks Tech. Co., Ltd. Made in China
No. 2901-2904, 3002, Block C, Section 1, Chuangzhi
Yuncheng Building, Liuxian Avenue, Xili Community,
Xili Street, Nanshan District, Shenzhen



Note:

1. The symbol combination of WEEE logo shall have a minimum height of 7 mm.
2. The CE marking must have substantially the same vertical dimension, which may not be less than 5 mm



Summary of testing

Tests performed

- EN 62560: 2012+A1:2015+A11:2019

The submitted samples were found to comply with the requirement of EN 62493:2015 without testing because they are LED-lightsource technology.

The submitted samples were found to comply with the above specification.

General product information

The products are self-ballasted LED lamps. They can be dimming.

All models have the similar mechanical and electrical construction, main differences among them are exterior color and power.

Unless otherwise specified, models H6004 were selected as representative models to perform all tests.

IEC 62560 17.2 were tested at location 2, others were tested at location 1.

List of Attachments:

Attachment 1: IEC TR 62778:2014

Attachment 2: Photo documentation

Report history

N/A

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4	GENERAL REQUIREMENTS		P
4.1	The lamp shall be so designed and constructed that in normal use cause no danger to the user.		P
4.2	Self-ballasted LED-Lamp are non-repairable.	The product is fixed by glue and cannot be recovered	P

5	MARKING		P
5.1	Mandatory marking		P
	- mark of origin		P
	- rated supply voltage (V)	AC220-240V	P
	- rated wattage (W)	9W	P
	- rated frequency (Hz)	50/60Hz	P
5.2	Addition marking		P
	- rated current (A)	See the label	P
	- weight significantly higher		N/A
	- special conditions or restrictions		N/A
	Not suitable for dimming; symbol used		P
	- not suitable for water contact		P
5.3	Marking durable and legible		P
	rubbing 15 s water, 15 s petroleum; marking legible	15s	P

6	INTERCHANGEABILITY		P
6.1	Cap interchangeability in accordance with IEC 60061-1		P
	Gauge in accordance with IEC 60061-3		P
6.2	Bending moment and mass imparted by the lamp at the lampholder		P
	Bending moment imparted by the lamp at the lampholder (Nm)	2 Nm for E27 lampholder 2 Nm for B22 lampholder	P
	Mass not exceeding value table 2 or as specified in IEC 60061-1 (kg)	0.078 kg for E27 LEB bulb 0.079 kg for E27 LEB bulb	P

7	PROTECTION AGAINST ACCIDENTAL CONTACT WITH LIVE PARTS		P
	Internal, basic insulated or live metal parts not accessible		P
	Tested with a test finger with a force of 10 N		P
	Compliance checked with appropriate gauges		P



8	INSULATION RESISTANCE AND ELECTRIC STRENGTH		
8.2	After storage 48 h at 91-95% relative humidity and 20-30 °C measuring of insulation resistance with d.c. 500 V (MΩ):		P
	≥ 4 MΩ for double or reinforced insulation	> 100 MΩ	P
8.3	Immediately after clause 8.2 electric strength test for 1 min		P
	Double or reinforced insulation, 4U + 2000 V	2960V	P
	No flashover or breakdown		P

9	MECHANICAL STRENGTH		
	Torsion resistance of unused lamps		P
9.2.1	Torque test		P
	B15d or E14 Cap.....	1,15 Nm	N/A
	B22d, E26, E26d or E27 Cap.....	3,0 Nm	E27 cap, 3.0Nm; B22 cap, 3.0Nm
	E11 or E12 Cap.....	0,8 Nm	N/A
	E17 Cap.....	1,5 Nm	N/A
	E39 or E40 Cap.....	5,0 Nm	N/A
	GX53 Cap.....	3,0 Nm	N/A
	Other type		N/A
9.3	Compliance criteria		P
	Clause 8 shall comply after the mechanical strength test.		P
9.4	Axial strength of Edison caps		P
	After full insertion into the gauge an axial force of Table 4 is applied to the central contact (N)	120N	P
	The insulation around the central contact shall remain intact		P

10	CAP TEMPERATURE RISE		
	The cap temperature rise Δt_s of the lamp shall not exceed 120 K.	E27 cap: 20.7K Max. B22 cap 18.3K Max.	P

11	RESISTANCE TO HEAT		P
	Parts of insulating material providing protection against electric shock, retaining live parts in position, ball-pressure test:	(see appended table)	P



12	RESISTANCE TO FLAME AND IGNITION		P
	External parts of insulating material preventing electric shock glow-wire test 650 °C	(see appended table)	P

13	FAULT CONDITIONS		P
13.2	Fault conditions: where diagram indicates fault condition impairs safety, electronic components have been short-circuited or disconnected	(see appended table)	P
13.3	When operated under fault conditions the lamp		P
	- does not emit flames or molten material		P
	- does not produce flammable gases or smoke		P
	- live parts not accessible		N/A
	After the tests the insulation resistance with d.c. 1000 V complies with requirements of Cl. 8.1 :	>100 MΩ	P

14 (16)	CREEPAGE DISTANCES AND CLEARANCES		P
	Creepage distances and clearances according to IEC 61347-1	(see appended table)	P
	Conductive accessible parts according to IEC 60598-1	(see appended table)	P

15	ABNORMAL OPERATION		P
	Non-dimmable self-ballasted lamps are tested on a dimmer or an electronic switch according the test circuit shown in Figure 8		N/A
	Operate the lamp for 8 h at most onerous dimming level		P
	When operated under abnormal operation the lamp		P
	- does not catch fire		P
	- does not produce flammable gases		P
	- live parts not accessible		P

16	TEST CONDITIONS FOR DIMMABLE LAMPS		P
	Test are carried out at maximum power setting for Clause 10 and Clause 17		P

17	PHOTOBIOLOGICAL SAFETY		P
17.1	UV radiation		N/A
	The LED lamp doesn't exceed 2mW/klm		N/A



17.2	Blue light hazard	P
	Assessed according to IEC TR 62778	P
	LED lamps shall be RG0 or RG1	P

18	INGRESS PROTECTION	N/A
18.1	Lamps shall be suitable for water contact unless marked with Figure 6	N/A
18.2	The lamp is subjected to an IPX4 test according to IEC 60598-1	N/A
	The lamp complies with the compliance provisions of 9.2 of IEC 60598-1	N/A
	Lamps constructed so that it is sealed to exclude water need not to be tested	N/A



11	TABLE: Ball Pressure Test of Thermoplastics			P
Allowed impression diameter (mm)		2.0mm		—
Object/ Part No./ Material	Manufacturer/ trademark	Test temperature (°C)	Impression diameter (mm)	
PCB	See the component list	125	0.82	
Supplementary information:-				

12	TABLE: Resistance to heat and fire – Glow wire tests			P
Object/ Part No./ Material	Manufacturer/ trademark	Glow wire test (GWT); (°C)	Verdict	
		750°C		
		te	ti	
PCB	See the component list	0s	0s	Pass
Lamp base	See the component list	0s	0s	Pass
LED cover	See the component list	0s	0s	Pass
Supplementary information:--				

13	TABLE: tests of fault conditions			P
Part	Simulated fault	Result	Hazard	
EC1	S/C	Input: 0V, 0A Output: 0V, 0A; Fuse open	NO	
VR1	S/C	Input: 0V, 0A Output: 0V, 0A; Fuse open	NO	
C1	S/C	Input: 0.02A, 0.96W, 0.328PF, Output: 6.16VDC, 0.01A; normal operation; protected recoverable	NO	
Output	S/C	Input: 0.003A, 0.28W, Output: 0V, 0A; protected recoverable	NO	

14	TABLE: Clearance And Creepage Distance Measurements					P
clearance cl and creepage distance dcr at/of:	Up (V)	U r.m.s. (V)	Required cl (mm)	cl (mm)	required dcr (mm)	dcr (mm)
Between L and N	—	240	1.5	2.8	2.5	2.8



Between live part and accessialbe enclosure	—	240	2.5	6.0	5.0	6.0
Supplementary information:--						

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TABLE: Critical components information					P
Object/part No.	Manufacturer/t rademark	Type/model	Technical data	Standard	Mark(s) of conformity
E27 cap	Hangzhou BOSOM New Materials Technology CO., LTD	E27	E27, Nickel steel	EN 62560	Tested with appliance
B22 cap	Hangzhou BOSOM New Materials Technology CO., LTD	B22	B22, Nickel steel	EN 62560	Tested with appliance
Lamp cap material	Hangzhou BOSOM New Materials Technology CO., LTD	A190G6 (k)	V-0,130°C	EN 62560	UL E333445
LED	LUMILEDS	LED2835	18VDC, 60mA Max, 2700-6500K, Ra>80	EN 62560	Tested with appliance
LED	LUMILEDS	LED2835	54VDC, 20mA Max,	EN 62560	Tested with appliance
PCB of LED	XIAMEN LED BOARD ELECTRON TECH CO LTD	LDB-12	V-0,130°C	UL 796	UL E347474
Input wiring	Shenzhen Runqi Wire Co Ltd	1569	105°C, 300Vac, Min 24AWG	UL 758	UL E495994
(Alternative)	DONGGUAN TRIUMPHCABLE CO LTD	1569	105°C, 300Vac, Min 24AWG	UL 758	UL E249743
(Alternative)	JIAN HONG RUI XING TECHNOLOGY CO LTD	HX135	V-0, 130°C	UL 796	UL E357502
Fuse	XIAMEN KOMING ELECTRONIC S CO LTD	RXF-1W	4.7R, 1W	UL 1412	UL E321729
Supplementary information: 1) Provided evidence ensures the agreed level of compliance, See OD-CB2039,					



Normal operation test						
Type reference	H6004				—	
1,06 times rated voltage or 1,05 times rated wattage	240V				—	
Frequency	50Hz				—	
Current	0.053A				—	
Power	7.91W				—	
Factor	0.617PF				—	
temperature (°C) of part	normal				abnormal	
	test 1	test 2	test 3	limit	test 4	limit
E27 lamp cap	--	20.7K	--	145	--	--
B22 lamp cap	--	18.3K	--	145	--	--
Lampholder surface	--	49.6	--	Ref.	--	--
Product enclosure(inside) for housing	--	48.9	--	Ref.	--	--
EC1	--	51.8	--	105	--	--
VR1	--	56.3	--	85	--	--
PCB near CE1	--	52.5	--	110	--	--
Output wire for LED driver	--	49.2	--	105	--	--
LED	--	66.4	--	130	--	--
Mounting surface	--	47.6	--	90	--	--
Ambient	--	40.0	--	Ref.	--	--
Note:						



Attachment 1 IEC TR 62778:2014

IEC TR 62778:2014			
Clause	Requirement + Test	Result – Remark	Verdict
5	Spectrum, colour temperature, and blue light hazard		P
5.1	Calculation of blue light hazard quantities and photometric quantities from emission spectra		P
5.2	Luminance and illuminance regimes that give rise to tmax values below 100s		P
7	MEASUREMENT INFORMATION FLOW		P
7.1	Basic flow		P
	'Law of conservation of luminance' applied		P
	Use of only true luminance/radiance values		P
	In case of luminaire: The light source is operated in the luminaire under similar conditions as when tested as a component		P
	In case E _{thr} value for RG2 was established the peak value was derived from angular light distribution		P
7.2	Conditions for the radiance measurement		P
	Standard condition applied (200mm distance, 0,011rad field of view)		P
	Non-standard condition applied		N/A
7.3	Special cases (I): Replacement by a lamp or LED module of another type		N/A
	Light source is a white light source		N/A
	Evaluation done based on highest luminance		N/A
	Evaluation done based on CCT value		N/A
7.4	Special cases (II): Arrays and clusters of primary light sources		N/A
	LED package is evaluated as.....:	<input checked="" type="checkbox"/> RG0 unlimited <input type="checkbox"/> RG1 unlimited	P
	E _{thr} of LED package applies to array		N/A
8	RISK GROUP CLASSIFICATION		P
	Risk group achieved:		P
	Risk Group 0 unlimited		P



IEC TR 62778:2014			
Clause	Requirement + Test	Result – Remark	Verdict
5	Spectrum, colour temperature, and blue light hazard		P
5.1	Calculation of blue light hazard quantities and photometric quantities from emission spectra		P
5.2	Luminance and illuminance regimes that give rise to t_{max} values below 100s		P
	Risk Group 1 unlimited		N/A
	E_{thr} (lx): Distance to reach RG1..... (m):		N/A

Risk Group Number	Risk Group Name	Corresponding t_{max} range (s)	Blue light hazard L_B (W/m ² .sr)
RG0	Exempt	>10000	<100
RG1	Low Risk	100-10000	100-10000
RG2	Moderate Risk	0.25-100	10000-4000000
RG3	High Risk	<0.25	>4000000



IEC TR 62778:2014			
Clause	Requirement + Test	Result – Remark	Verdict
TABLE	SPECTRORADIOMETRIC MEASUREMENT		P
Tested model number.....:		H6004	
Tested voltage.....:		230VAC	
Tested current.....:		0.052A	
Tested frequency.....:		50Hz	
Ambient temperature.....:		25.1°C	
Measurement distance.....:		100mm	
Source size.....:		<input checked="" type="checkbox"/> Non-small source <input type="checkbox"/> Small source	
Field of.....:		<input type="checkbox"/> 100 mrad <input checked="" type="checkbox"/> 11 mrad <input type="checkbox"/> 1.7 mrad	
Blue light hazard radiance (L _B).....:		1.69e+01W/(m ² •sr)	
Blue light hazard irradiance (E _B).....:		--W/m ²	
Luminance (L).....:		--cd/m ²	
Illuminance (E _{thr}).....:		--lx	
Calculate distance (d _{min}).....:		--m	

Measurement Uncertainty Statement:

EB, Urel=2.52% (k=2)

LB, Urel=2.84% (k=2)

LR, Urel=2.84% (k=2)

Test Equipment

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Equipment Name	Manufacturer	Model No.	Reference No.	Calibration Due Date
Light Radiation Safety Test System	LINKCOLOR	LRS-104	SE-1164	2024-06-01
AC power source	LINKCOLOR	LCP-500R	SE-1192	2024-06-01
DC power supply	LINKCOLOR	M8874	SE-1193	2024-06-01
Digital Power Meter	YOKOGAMA	WT310	SE-1194	2024-06-01
Temperature & Humidity meter	Zhengzhou Boyang	HTC-1	SE-423	2024-06-01
Illuminance Standard Lamp	LINKCOLOR	LCL-100	SE-1195	2024-06-01
Brightness Standard Lamp	LINKCOLOR	LCL-200	SE-1196	2024-06-01
Deuterium Lamp	LINKCOLOR	LCL-300	SE-1197	2024-06-01
Illuminometer	LINKCOLOR	ST-80C	SE-1198	2024-06-01

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EN 62493:2015

4.2	APPLICATION OF LIMITS (Test summary)			—	
	Specific absorption rate (SAR)			—	
a)	CISPR 15 clause 4.3.1 Disturbance voltage mains terminals 20 kHz – 30 MHz	*)		P	
b)	CISPR 15 clause 4.4 Radiated electromagnetic disturbances 100 kHz – 30 MHz	*)		P	
c)	CISPR 15 clause 4.4.2 Radiated electromagnetic disturbances 30 MHz – 300 MHz	*)		P	
*)	<input checked="" type="checkbox"/> See separate Test Report for measurements of a), b) and c) above <input type="checkbox"/> Only measurement of d) below. See measurement results below. In this case this test report does not show compliance with IEC 62493.			—	
	Induced current density			P	
d)	Induced current density 20 kHz – 10 MHz	See measurement results below		P	
4.2.d	INDUCED CURRENT DENSITY			—	
	Power supply system utilised:			—	
	Voltage	AC230V		—	
	Frequency	50/60Hz		—	
	Environmental conditions:			—	
	Temperature	25°C		—	
	Humidity	52% R.H.		—	
	EuT operation mode:			—	
	<input checked="" type="checkbox"/> Normal operation			—	
	<input type="checkbox"/> Other operation:			—	
4.2.d	MEASUREMENT RESULTS			—	
	Measuring with “Van der Hoofden” test head			—	
	Location of EuT	Measuring distance	Result (F)	Limit (F)	Verdict
	Front of EuT	50 cm	--	0,85	N/A
	Rear of EuT	50 cm	--	0,85	N/A
	Side of EuT	50 cm	--	0,85	N/A



Attachment 2: Photo



Photo 3

For model
H6004



Photo 4

For model
H6004



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Photo 5

For model
H6004

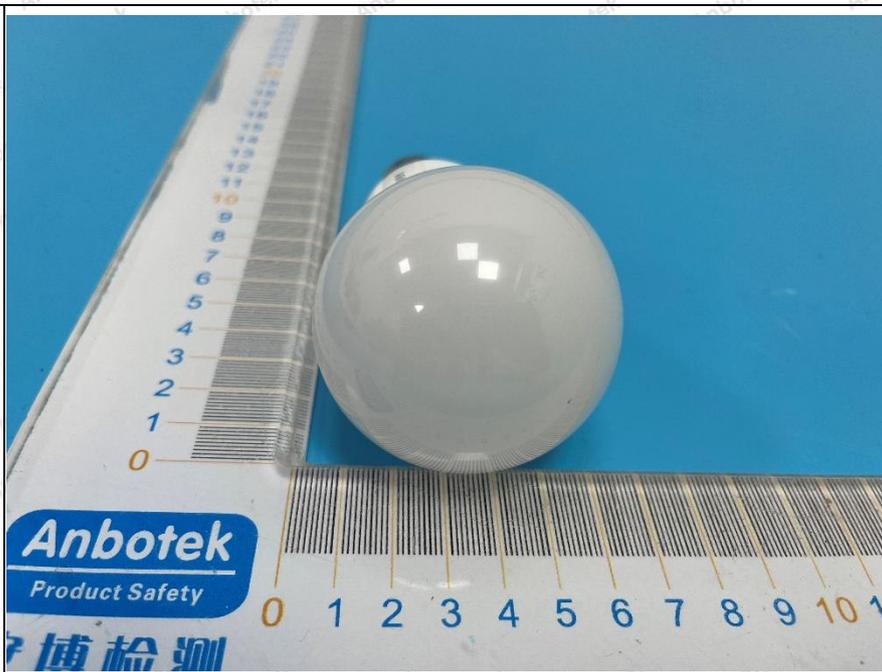


Photo 6

For model
H6004



Photo 7

For model
H6004

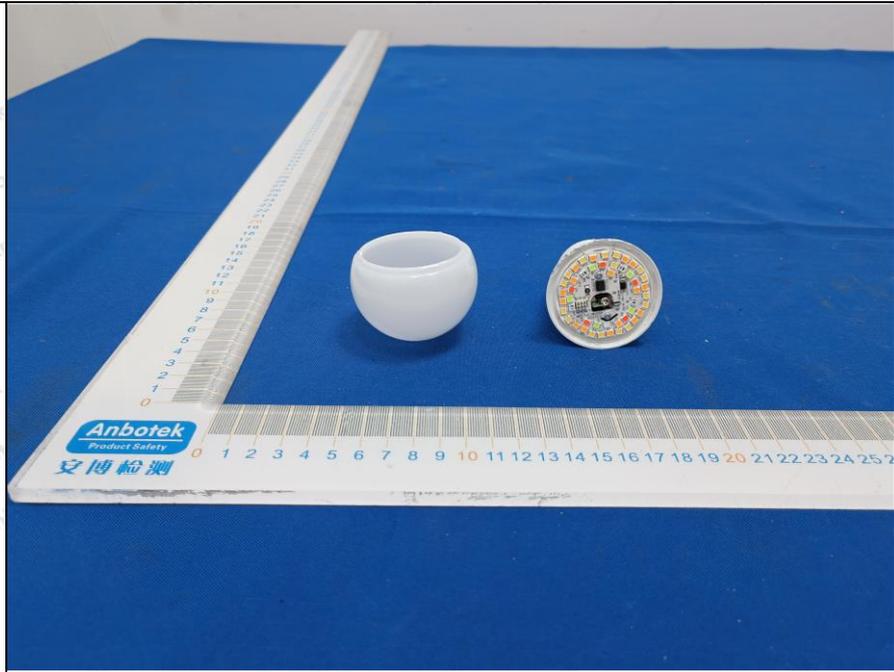
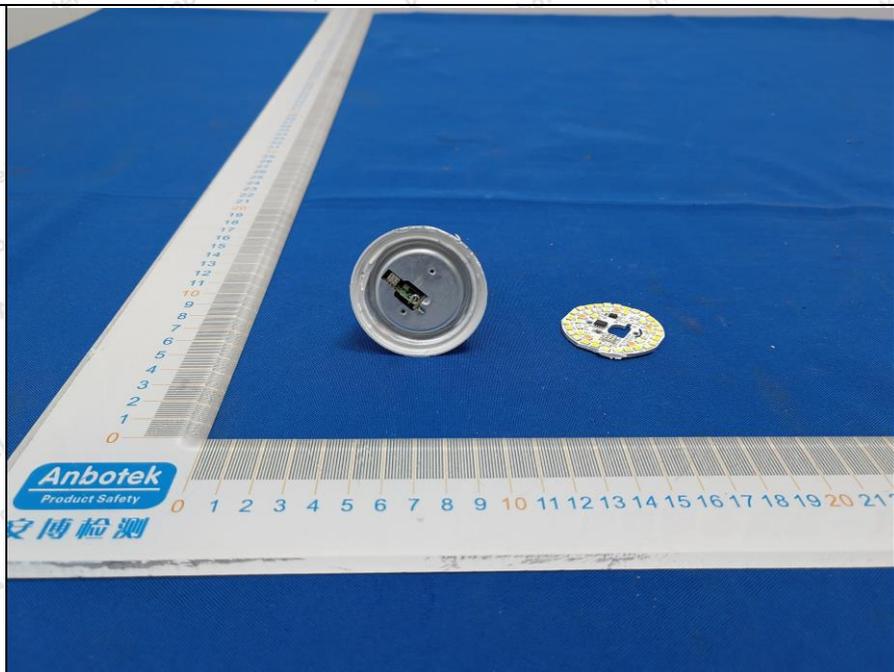
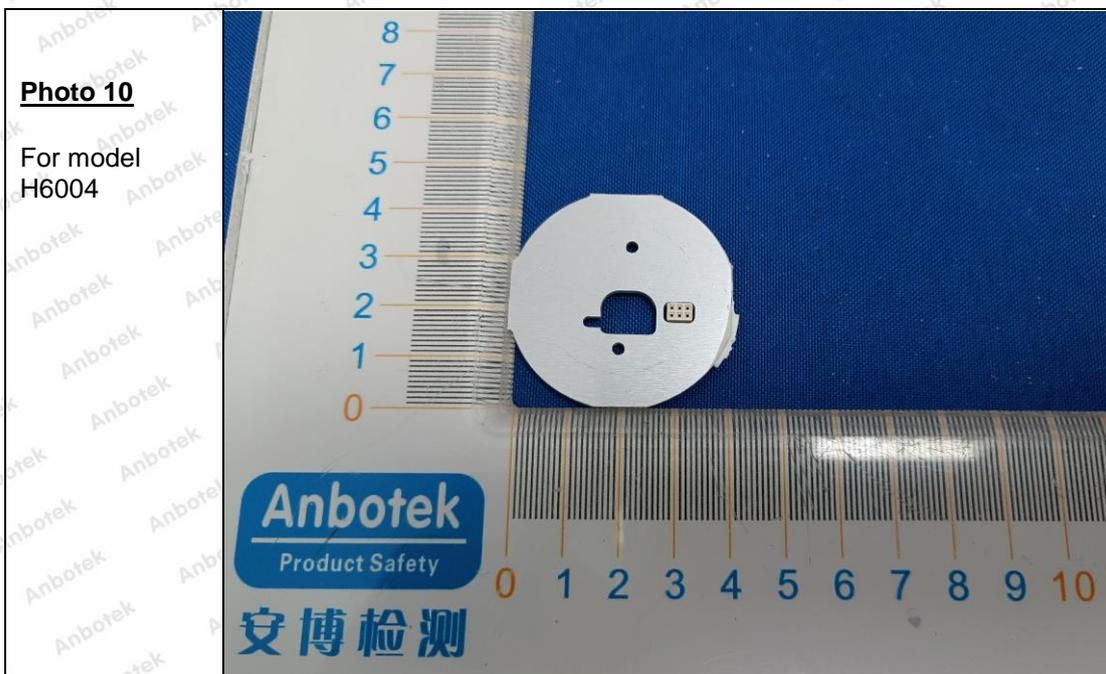
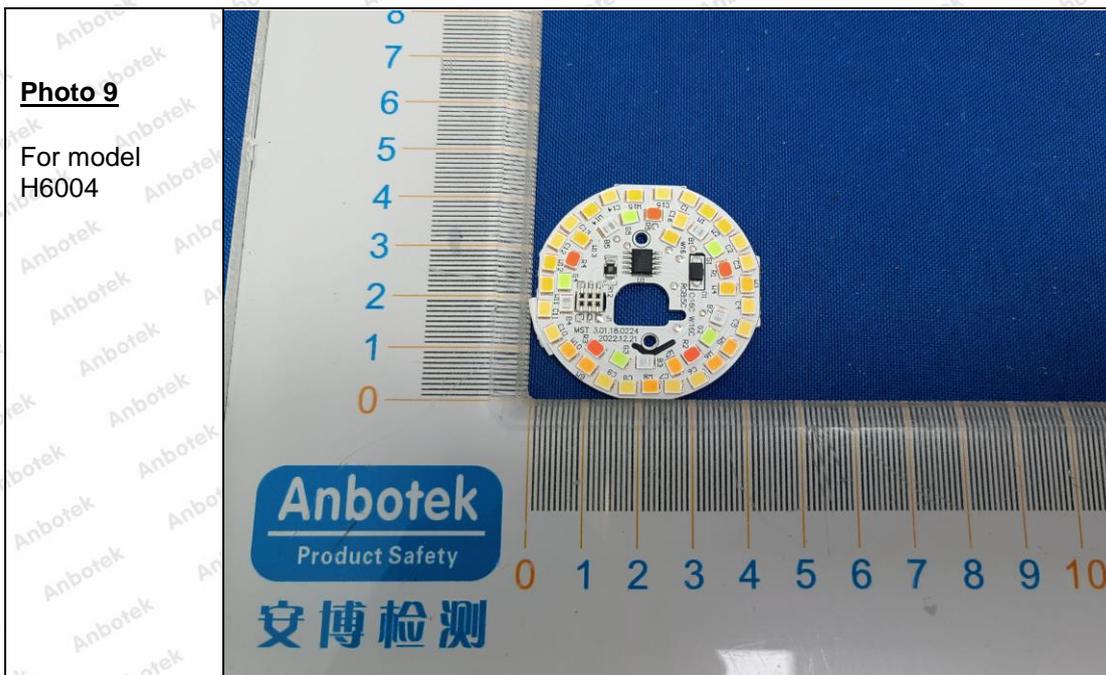


Photo 8

For model
H6004





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Photo 11

For model
H6004

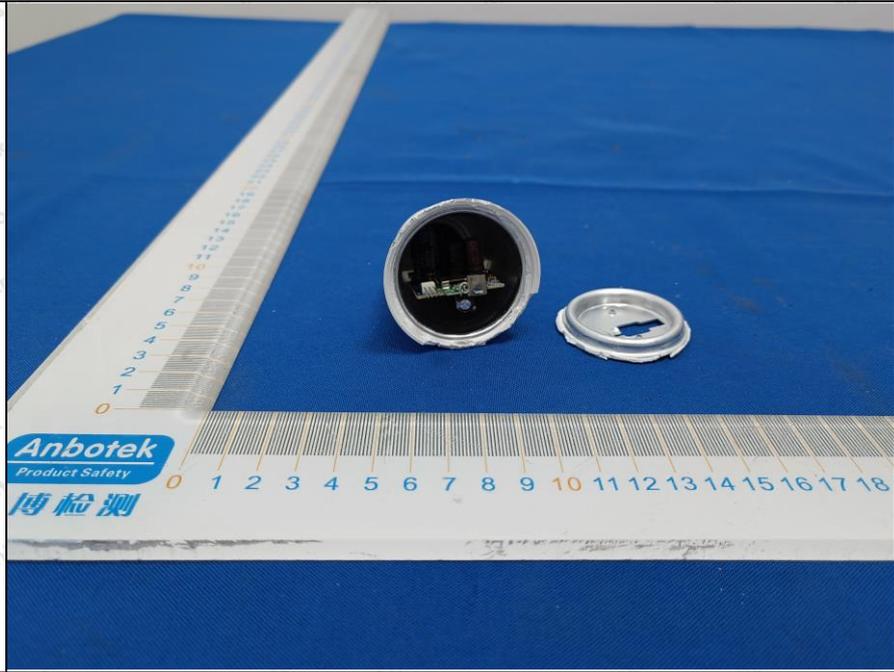
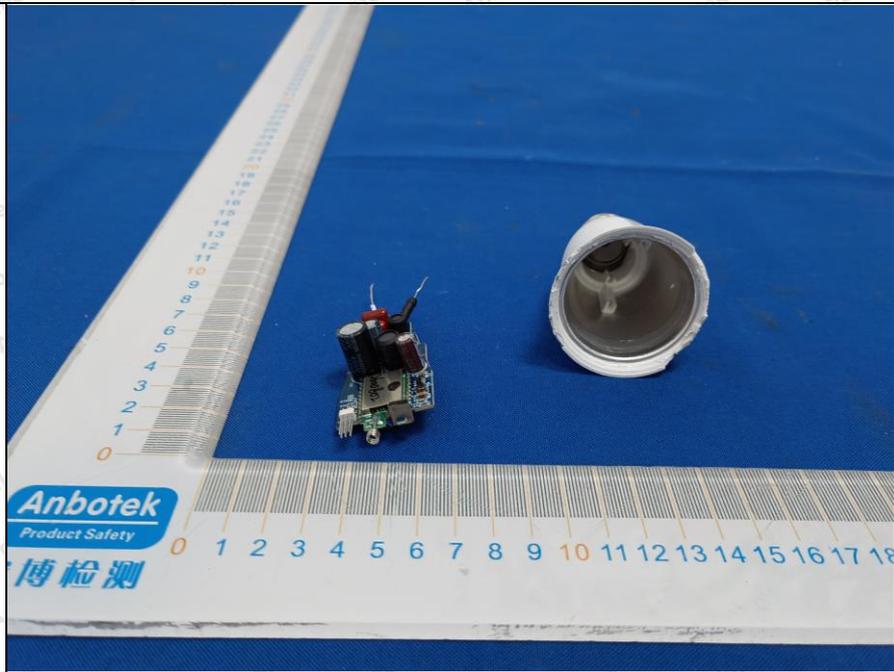


Photo 12

For model
H6004



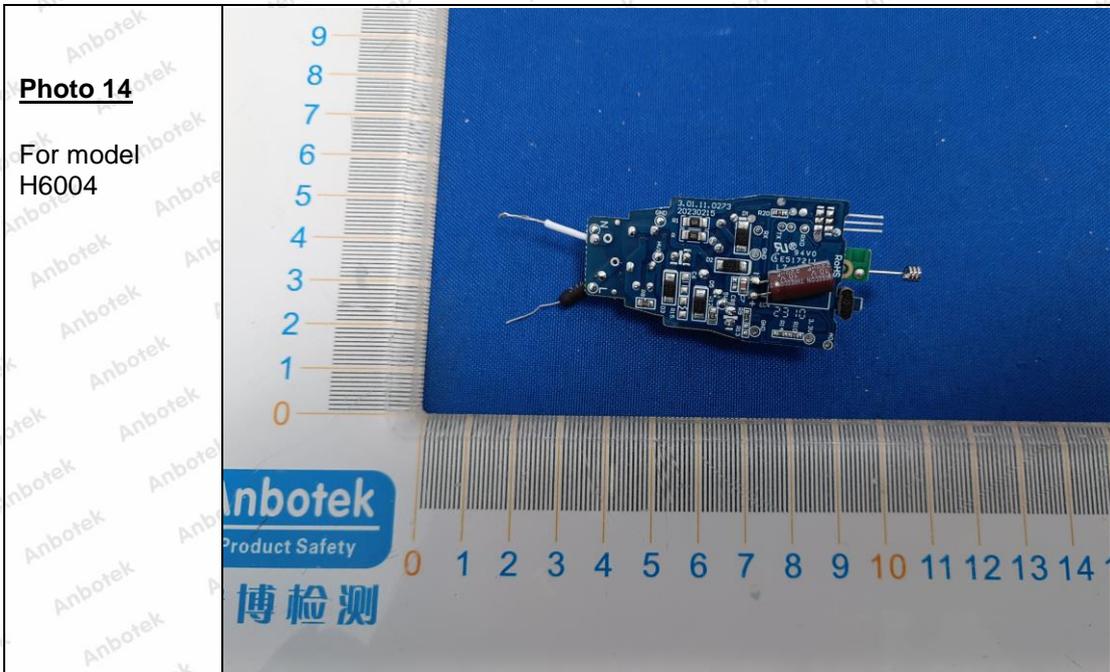
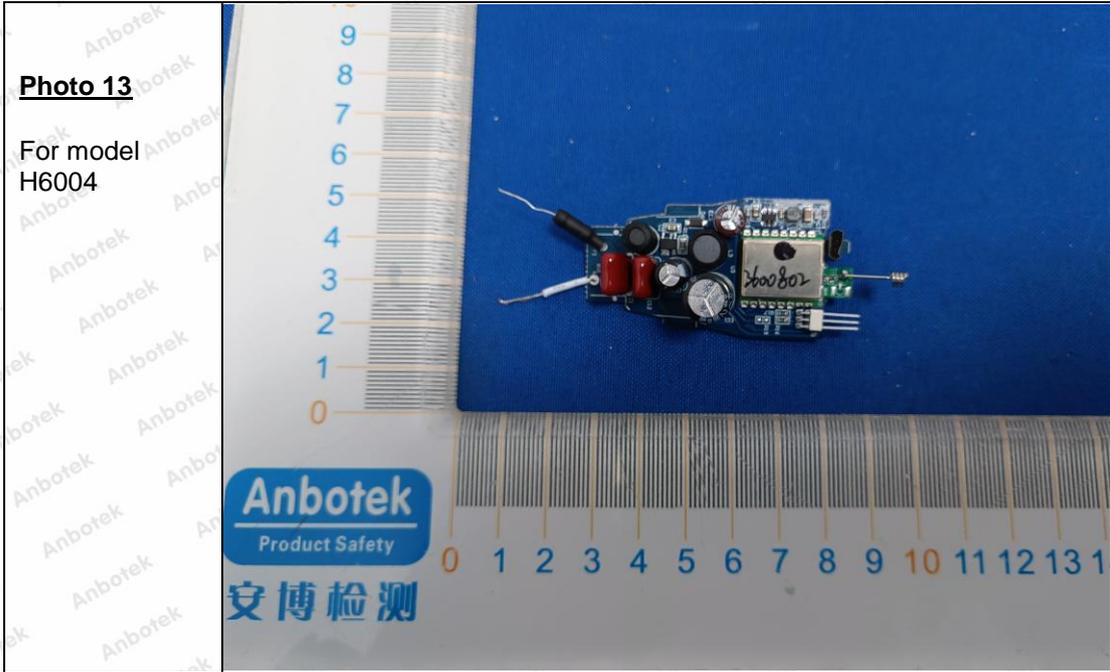
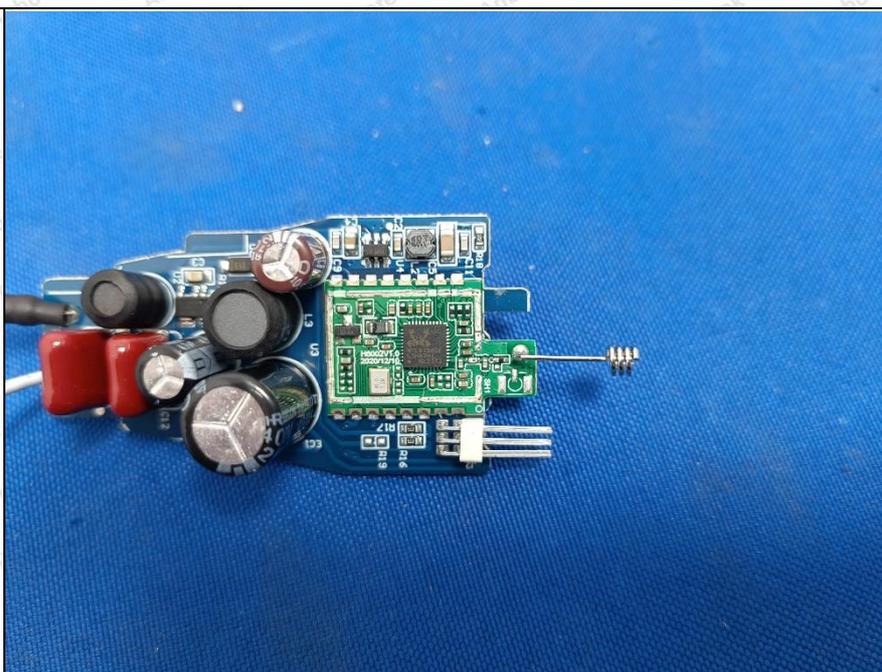


Photo 15

For model
H6004



--- End of report ---

