

## FCC RF EXPOSURE

## CERTIFICATION TEST REPORT

*For*

**ITO**

**MODEL NUMBER: 1446xxx (xxx are variables, which can be any 3 digits)**

**FCC ID: 2BCO21446XXX**

**REPORT NUMBER: 4790650757-RF-2**

**ISSUE DATE: June 30, 2023**

*Prepared for*

**Astro Lighting Inc  
105 West Dewey Ave Building E Suite 1, Wharton, NJ 07885 USA**

*Prepared by*

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Revision History

Rev.	Issue Date	Revisions	Revised By
V0	06/30/2022	Initial Issue	

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## 1. ATTESTATION OF TEST RESULTS

### Applicant Information

Company Name: Astro Lighting Inc  
 Address: 105 West Dewey Ave Building E Suite 1, Wharton, NJ 07885  
 USA

### Manufacturer Information

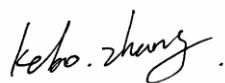
Company Name: Astro Lighting Inc  
 Address: 105 West Dewey Ave Building E Suite 1, Wharton, NJ 07885  
 USA

### EUT Information

EUT Name: ITO  
 Model: 1446xxx (xxx are variables, which can be any 3 digits)  
 Model Difference: All models are identical except for model name and the color of the finish.  
 Sample Received Date: December 27, 2022  
 Sample Status: Normal  
 Sample ID: 5657500  
 Date of Tested: January 18, 2023 ~ June 10, 2023

APPLICABLE STANDARDS	
STANDARD	TEST RESULTS
FCC 47CFR§1.1307	PASS
FCC 47CFR§1.1310	PASS
FCC 47CFR§2.1093	PASS
FCC 47CFR§2.1091	PASS

Prepared By:



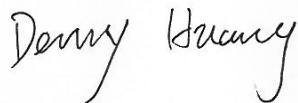
Kebo Zhang  
 Senior Project Engineer

Approved By:



Stephen Guo  
 Laboratory Manager

Checked By:



Denny Huang  
 Senior Project Engineer

## 2. TEST METHODOLOGY

The tests documented in this report were performed in accordance with FCC47CFR§1.1307(b)(1), FCC 47CFR§1.1310, FCC 47CFR§2.1093, KDB680106 D01 Wireless Power Transfer v04.

## 3. FACILITIES AND ACCREDITATION

Accreditation Certificate	<p><b>A2LA (Certificate No.: 4102.01)</b> UL Verification Services (Guangzhou) Co., Ltd. Song Shan Lake Branch. has been assessed and proved to be in compliance with A2LA.</p> <p><b>FCC (FCC Designation No.: CN1187)</b> UL Verification Services (Guangzhou) Co., Ltd. Song Shan Lake Branch. Has been recognized to perform compliance testing on equipment subject to the Commission's Delcaration of Conformity (DoC) and Certification rules</p> <p><b>ISED (Company No.: 21320)</b> UL Verification Services (Guangzhou) Co., Ltd. Song Shan Lake Branch. has been registered and fully described in a report filed with ISED. The Company Number is 21320 and the test lab Conformity Assessment Body Identifier (CABID) is CN0046.</p> <p><b>VCCI (Registration No.: G-20192, R-20202, C-20153 and T-20155)</b> UL Verification Services (Guangzhou) Co., Ltd. Song Shan Lake Branch. has been assessed and proved to be in compliance with VCCI, the Membership No. is 3793. Facility Name: Chamber D, the VCCI registration No. is G-20192 and C-20153 Shielding Room B , the VCCI registration No. is C-20153 and T-20155</p>
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Note: All tests measurement facilities use to collect the measurement data are located at Building 10, Innovation Technology Park, Song Shan Lake Hi tech Development Zone, Dongguan, 523808, China

#### 4. DESCRIPTION OF EUT

EUT Name	ITO	
Model	1446xxx (xxx are variables, which can be any 3 digits)	
Model Difference	All models are identical except for model name and the color of the finish.	
Product Description	Operation Frequency	111 ~ 205 kHz
Rated Output Power	5 W	
Antenna type	Coil	
Ratings	AC 120 V, 60 Hz	

## 5. REQUIREMENT

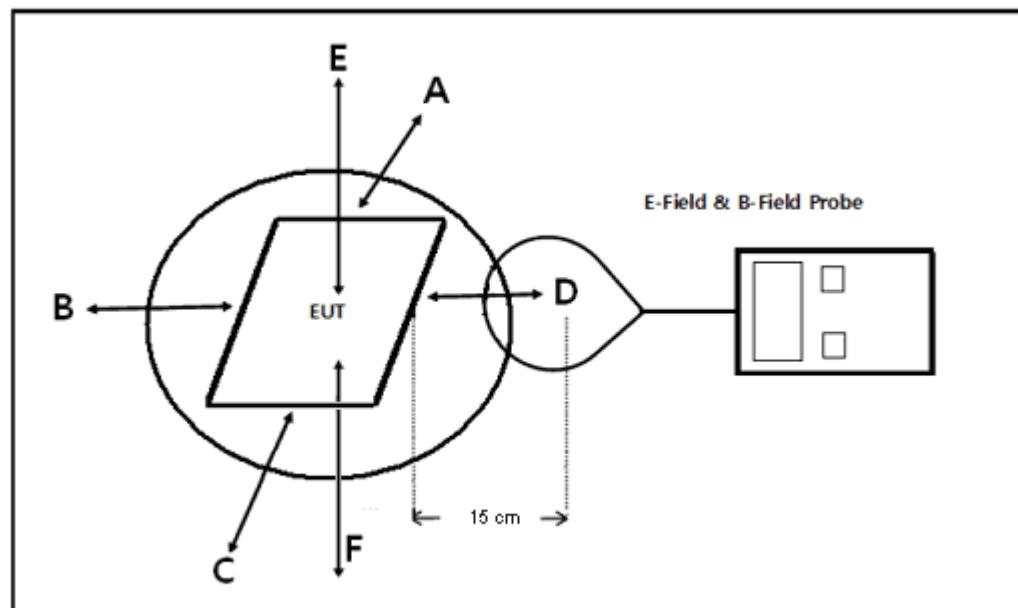
### LIMIT

Frequency Range (MHz)	E-field Strength (E) (V/m)	Magnetic Field Strength (H) (A/m)	Power Density (S) (mW/cm <sup>2</sup> )	Averaging Time  E  <sup>2</sup> ,  H  <sup>2</sup> or S (Minutes)
0.3 -- 1.34	614	1.63	(100)*	30
1.34 -- 30	824/f	2.19/f	(180/f <sup>2</sup> )*	30
30 -- 300	27.5	0.073	0.2	30
300 -- 1500	--	--	f/1500	30
1500 -- 100,000	--	--	1.0	30

### METHOD OF MEASUREMENT

- The RF exposure test was performed in shielded chamber.
- The geometric centre of probe was placed at 15 cm test distance surrounding the device and 20 cm above the top surface.
- The measurement probe used to search of highest strength.
- The highest emission level was recorded and compared with limit as soon as measurement of each points (A, B, C, D, E) were completed.
- The EUT were measured according to the dictates of KDB680106 D01 Wireless Power Transfer v04.

### BLOCK DIAGRAM OF TEST SETUP



Note: As bottom point is not required to test for desktop devices, so we scanning all the surfaces and recorded the worst level in F.

## **EQUIPMENT APPROVAL CONSIDERATIONS**

The EUT comply with KDB680106 D01 Wireless Power Transfer v04.

Note: The date of test is before the published date of test KDB680106 D01 Wireless Power Transfer v04, we had checked all the requirement in the new KDB, and all the test data can meet the new requirements.

1) Power transfer frequency is less than 1 MHz.

Yes; the device operated in the frequency range from 111 kHz to 205 kHz.

2) The output power from each transmitting element (e.g., coil) is less than or equal to 15 watts.

Yes; the maximum output power of each primary coil is 5 watts.

3) A client device providing the maximum permitted load is placed in physical contact with the transmitter (i.e., the surfaces of the transmitter and client device enclosures need to be in physical contact).

Yes; Client device is placed directly in contact with the transmitter.

4) Only § 2.1091-Mobile exposure conditions apply (i.e., this provision does not cover § 2.1093-Portable exposure conditions).

Yes; The EUT is a mobile device.

5) The E-field and H-field strengths, at and beyond 20 cm surrounding the device surface, are demonstrated to be less than 50% of the applicable MPE limit, per KDB 447498, Table 1. These measurements shall be taken along the principal axes of the device, with one axis oriented along the direction of the estimated maximum field strength, and for three points per axis or until a 1/d (inverse distance from the emitter structure) field strength decay is observed. Symmetry considerations may be used for test reduction purposes. The device shall be operated in documented worst-case compliance scenarios (i.e., the ones that lead to the maximum field components), and while all the radiating structures (e.g., coils or antennas) that by design can simultaneously transmit are energized at their nominal maximum power.

Yes; The EUT's field strength levels are less than 50% of the MPE limit.

6) For systems with more than one radiating structure, the conditions specified in (5) must be met when the system is fully loaded (i.e., clients absorbing maximum power available), and with all the radiating structures operating at maximum power at the same time, as per design conditions. If the design allows one or more radiating structures to be powered at a higher level while other radiating structures are not powered, then those cases must be tested as well. For instance, a device may use three RF coils powered at 5 W, or one coil powered at 15 W: in this case, both scenarios shall be tested.

Not Applicable; The EUT have one coil only.

## **MEASURING INSTRUMENT USED**

Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Due. Date
Electric and Magnetic Field Analyzer	Narda	EHP-200A	170WX90204	June 20, 2022	June 19, 2023

## E FIELD AND H FIELD STRENGTH TEST RESULT

Test Mode	Description
Mode 1	Charging with 5 W wireless charging load (Full Load)
Mode 2	Charging with 5 W wireless charging load (Half Load)
Mode 3	Charging with 5 W wireless charging load (No Load)

Note: All the modes had been tested, but only the worst data was recorded in the report.

H-Filed Strength at 15 cm from the edges surrounding the EUT and 15 cm above the top surface of the EUT (A/m)

Test Position	H-Filed Strength Measure Result	Limits (A/m)
	Mode 1	
	A/m	
A	0.0525	1.63
B	0.0528	1.63
C	0.0515	1.63
D	0.0529	1.63
E	0.3492	1.63
F	0.0533	1.63

E-Filed Strength at 15 cm from the edges surrounding the EUT and 15 cm above the top surface of the EUT (V/m)

Test Position	E-Filed Strength Measure Result	Limits (V/m)
	Mode 1	
	V/m	
A	0.4315	614
B	0.4011	614
C	0.4083	614
D	0.4042	614
E	1.4462	614
F	0.4439	614

Note: As the test distance is 20 cm for the new KDB, the 15 cm test distance can be considered as worst case.

**END OF REPORT**