

# Measurement and Test Report

## For

### Microsun Lamps LLC

7890 Center Point 70 Blvd., Dayton, OH 45424, USA

**FCC ID: 2ART7-4008-SI**

FCC Rule(s):	<u>KDB 680106 D01 V03</u>
Product Description:	<u>LED Portable Luminaire</u>
Tested Model:	<u>4008-SI</u>
Report No.:	<u>STR18118140I-1</u>
Sample Receipt Date:	<u>2018-11-13</u>
Tested Date:	<u>2018-11-13 to 2018-12-17</u>
Issued Date:	<u>2018-12-17</u>
Tested By:	<u>Mike Shi / Engineer</u>
Reviewed By:	<u>Silin Chen / EMC Manager</u>
Approved & Authorized By:	<u>Jandy So / PSQ Manager</u>
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## 1. GENERAL INFORMATION

### 1.1 Product Description for Equipment Under Test (EUT)

#### Client Information

Applicant: Microsun Lamps LLC  
Address of applicant: 7890 Center Point 70 Blvd., Dayton, OH 45424, USA

Manufacturer: Adot Lighting Co.,Ltd.  
Address of manufacturer: No.8 Bldg, Wise-Nest Industrial Park, Caotan 10th Rd., ETDZ, Xi'an ,ShaanXi, 710018, P.R.China

<b>General Description of EUT</b>	
Product Name:	LED Portable Luminaire
Trade Name:	/
Model No.:	4008-SI
Adding Model(s):	/

*Note: The test data is gathered from a production sample, provided by the manufacturer.*

<b>Technical Characteristics of EUT</b>	
Frequency Range:	110~205kHz
Antenna Type:	Coil Antenna
Rated Voltage:	DC5V (Wireless output)
Rated Current:	≤1A (Wireless output)
Rated Power:	≤ 5W (Wireless output)

## 2. RF Exposure Test Report

### 2.1 Standard Applicable

According to § 1.1310 system operating under the provisions of this section shall be operating in a manner that the public is not exposed to radio frequency energy level in excess limit for maximum permissible exposure.

TABLE 1—LIMITS FOR MAXIMUM PERMISSIBLE EXPOSURE (MPE)

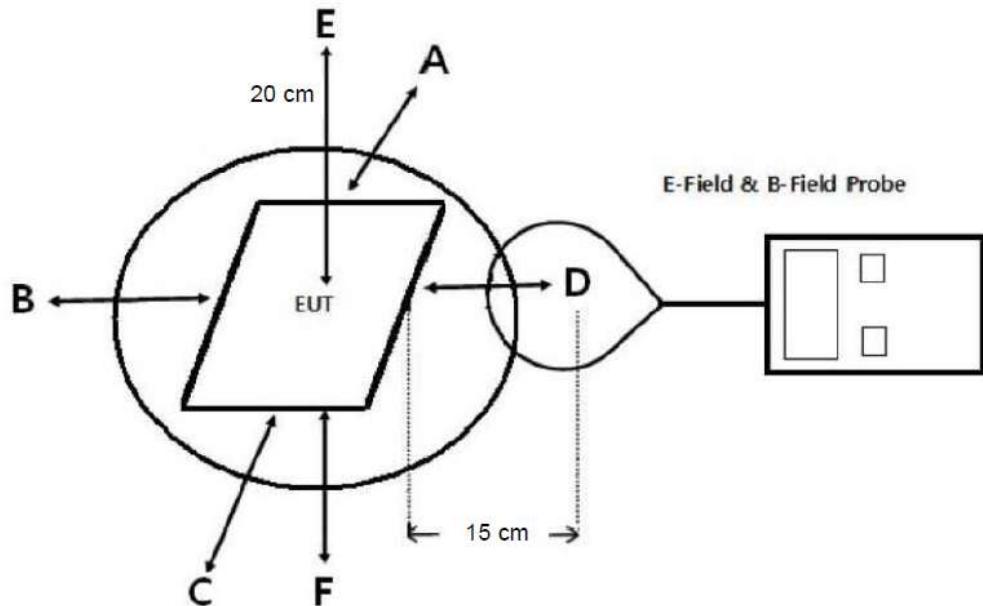
Frequency range (MHz)	Electric field strength (V/m)	Magnetic field strength (A/m)	Power density (mW/cm <sup>2</sup> )	Averaging time (minutes)
<b>(A) Limits for Occupational/Controlled Exposure</b>				
0.3-3.0	614	1.63	*100	6
3.0-30	1842/f	4.89/f	*900/f <sup>2</sup>	6
30-300	61.4	0.163	1.0	6
300-1,500			f/300	6
1,500-100,000			5	6
<b>(B) Limits for General Population/Uncontrolled Exposure</b>				
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
300-1,500			f/1500	30
1,500-100,000			1.0	30

f = frequency in MHz \* = Plane-wave equivalent power density

### 2.2 Test Conditions

Test Mode	Description	Remark
TM1	Full Load	With resistor
TM2	Full Charge	With mobile phone
<b>Measurement Distance:</b>		15 cm

## 2.3 Test Procedure



- The measurement probe was placed at test distance(15 cm for A,B,C,D,F and 20 cm for E) which is between the edge of the charger and the geometric center of probe.
- The highest emission level was recorded at the measurement points(A, B, C, D, E, F).
- The EUT was measured according to the distance of KDB 680106 D01 V03.

## 2.4 Test Result

The EUT dose comply with item 5.2 of KDB 680106 D01V03

- Power transfer frequency is less than 1 MHz  
*Yes, the device operate in the frequency range from 110kHz to 205kHz.*
- Output power from each primary coil is less than 15 watts  
*Yes, the maximum output power of the primary coil is less than 15W.*
- The transfer system includes only single primary and secondary coils. This includes charging systems that may have multiple primary coils and clients that are able to detect and allow coupling only between individual pairs of coils  
*Yes, the client device includes only single primary coils.*
- Client device is inserted in or placed directly in contact with the transmitter  
*Yes, Client device is placed directly in contact with the transmitter.*
- Mobile exposure conditions only (portable exposure conditions are not covered by this exclusion).  
*Yes, It is mobile exposure conditions only.*

6. The aggregate H-field strengths at 15 cm surrounding the device and 20 cm above the top surface from all simultaneous transmitting coils are demonstrated to be less than 50% of the MPE limit.

Yes, The EUT field strength levels are less than 50% of the MPE limit, refer to test TM1, TM2 list, and the coils can't transmitted simultaneous.

*Test Mode: TM1 (with resistor)*

<b>Electric Field Emissions</b>			
<b>Test Position</b>	<b>Measure Value (V/m)</b>	<b>Limit(V/m)</b>	<b>50% Limit (V/m)</b>
Top	1.65	614	307
Bottom	3.43	614	307
Side 1	2.36	614	307
Side 2	2.52	614	307
Side 3	2.34	614	307
Side 4	2.44	614	307

<b>Magnetic Field Emissions</b>			
<b>Test Position</b>	<b>Measure Value (A/m)</b>	<b>Limit(A/m)</b>	<b>50% Limit (A/m)</b>
Top	0.0079	1.63	0.815
Bottom	0.0068	1.63	0.815
Side 1	0.0045	1.63	0.815
Side 2	0.0078	1.63	0.815
Side 3	0.0052	1.63	0.815
Side 4	0.0064	1.63	0.815

*Test Mode: TM2 (with mobile phone)*

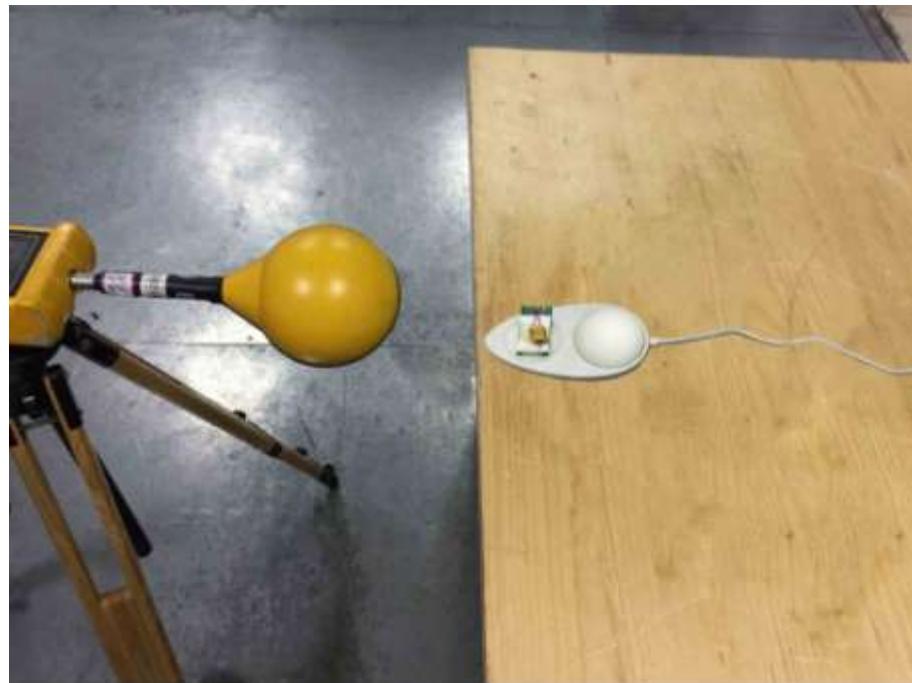
<b>Electric Field Emissions</b>			
<b>Test Position</b>	<b>Measure Value (V/m)</b>	<b>Limit(V/m)</b>	<b>50% Limit (V/m)</b>
Top	2.43	614	307
Bottom	2.06	614	307
Side 1	2.15	614	307
Side 2	2.16	614	307
Side 3	1.12	614	307
Side 4	2.87	614	307

<b>Magnetic Field Emissions</b>			
<b>Test Position</b>	<b>Measure Value (A/m)</b>	<b>Limit(A/m)</b>	<b>50% Limit (A/m)</b>
Top	0.0082	1.63	0.815
Bottom	0.0063	1.63	0.815
Side 1	0.0052	1.63	0.815
Side 2	0.0047	1.63	0.815

Side 3	0.0064	1.63	0.815
Side 4	0.0035	1.63	0.815

## 2.4 Test Photos



\*\*\*\*\* END OF REPORT \*\*\*\*\*