

# Sterno, LLC

## TEST REPORT

**SCOPE OF WORK**

EMC TESTING—ALL-IN-ONE FLAMELESS CANDLE

**REPORT NUMBER**

231206083GZU-002

**ISSUE DATE**

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**TEST REPORT**

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FCC ID: 2BEHC-6019924

**Test standards**

**47 CFR PART 1, Subpart I, Section 1.1310**  
**KDB 680106 D01 Wireless Power Transfer v04**

**Sample Description**

Product : Rechargeable Candle  
Model No. : ALL-IN-ONE FLAMELESS CANDLE  
Electrical Rating : 120VAC, 60Hz  
Serial No. : Not Labeled  
Date Received : 06 December 2023  
Date Test Conducted : 18 December 2023-28-February-2024

Prepared and Checked By



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Approved By:



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**TEST REPORT****1.0 TEST RESULT SUMMARY**

Classification of EUT: Class B

Test Item	Standard	Result
EMF	47 CFR PART 1, Subpart I, Section 1.1310	PASS

## Remark:

When determining the test results, measurement uncertainty of tests has been considered.

## TEST REPORT

### 2.0 General Description

#### 2.1 Product Description

Operating Frequency 63KHz  
Type of Modulation: Load modulation  
Antenna Type Inductive loop coil antenna  
Power Supply: 120VAC, 60Hz  
Power cord: wires unscreened cable

#### 2.2 Test Facility

Room102/104, No 203, KeZhu Road, Science City, GETDD Guangzhou, China

A2LA Certificate Number 0078.10

Intertek Testing Services Shenzhen Ltd. Guangzhou Branch is accredited by A2LA and Listed in FCC website. FCC accredited test labs may perform both Certification testing under Parts 15 and 18 and Declaration of Conformity testing.

#### 2.3 EUT Exercising Software

N/A

#### 2.4 Special Accessories

N/A

#### 2.5 Equipment Modification

Any modifications installed previous to testing by Sterno, LLC will be incorporated in each production model sold / leased in the United States.

No modifications were installed by Intertek Testing Services Shenzhen Ltd. Guangzhou Branch.

#### 2.6 Support Equipment List and Description

## TEST REPORT

This product was tested with corresponding support equipment as below:

### Support Equipment:

Equipment	Model No.	Rating	Supplier
AC DC ADAPTER	KS65DU-0500500	INPUT:100~240VAC,50/60Hz,2.0A OUTPUT:5VDC/5.0A	Client

Cabel:

Description	Model No.	Connector type	Cable length/type	Supplied by
Adapter to EUT Cabel	--	--	1.53 m(unshielded)	Client
AC to Adapter	--	--	1.25 m(unshielded)	Client

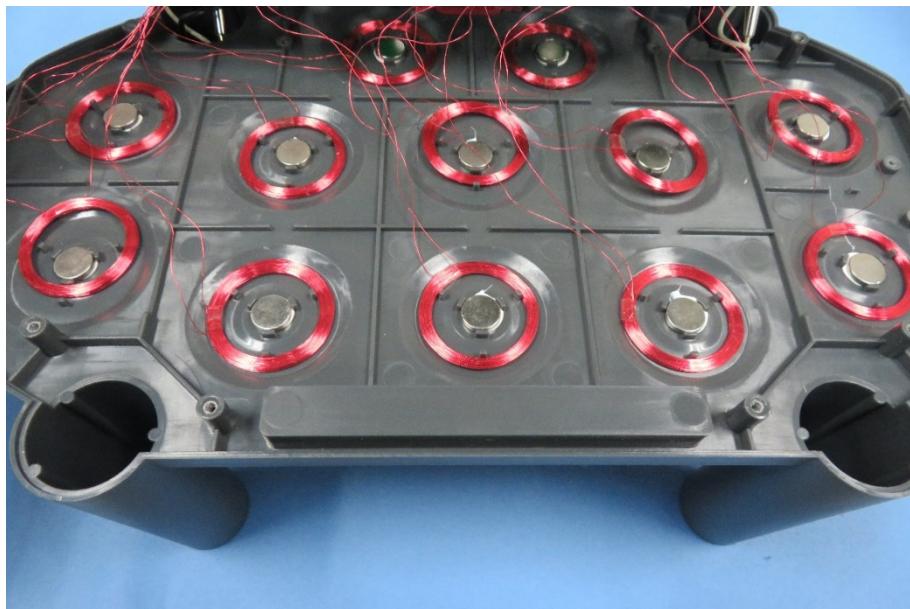
**Remark:** EUT has 12 coils, EUT can transmit simultaneously, The twelve coils are designed because the client candle lamp can be charged at the same time, and the candle lamp client is one of the typical client devices that is chosen so that the EUT is fully operational at its transmitter's maximum power. They are sold together.

To investigate the maximum EMI emission characteristics generates from EUT, the test system was pre-scanning tested based on the consideration of following EUT operation mode or test configuration mode which possible have effect on EMI emission level. Each of these EUT operation mode(s) or test configuration mode(s) mentioned above evaluated respectively

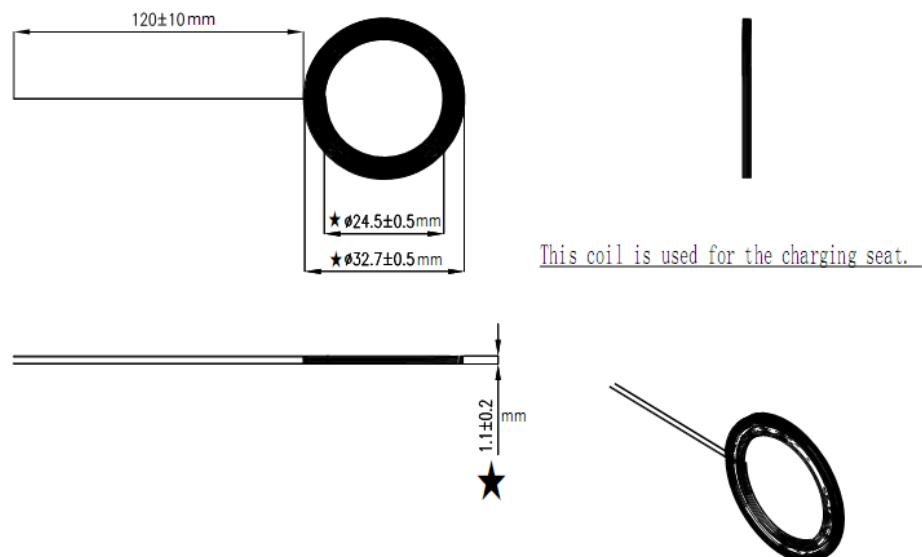
Pre-test mode	Description	
Standby Mode	kept transmitting continuously	
Charging Mode	CH: Low	Loaded candle lamp is charging at 1% battery power, 50% and 99% battery power respectively, keep transmitting continuously.
	CH: Middle	
	CH: High	

The coil uses turn meter to measure the number of turns:90 turns.

## TEST REPORT



coil design:



## TEST REPORT

### 3.0 EMF TEST

#### 3.1 Standard Requirement

Systems operating under the provisions of this section shall be operated in a manner that ensures that the public is not exposed to radio frequency energy level in excess limit for maximum permissible exposure. In accordance with 47 CFR FCC Part 2 Subpart J, section 2.1091 this device has been defined as a mobile device whereby a distance of 0.1m normally can be maintained between the user and the device.

##### (a) Limits for Occupational / Controlled Exposure

Frequency Range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (H) (A/m)	Power Density (S)(mW/cm <sup>2</sup> )	Averaging Times  E  <sup>2</sup> , H  <sup>2</sup> or S (minutes)
0.3-3.0	614	1.63	(100)*	6
3.0-30	1842/f	4.89/f	(900/f)*	6
30-300	61.4	0.163	1.0	6
300-1500	--	--	F/300	6
1500-100000	--	--	5	6

##### (b) Limits for General Population / Uncontrolled Exposure

Frequency Range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (H) (A/m)	Power Density (S)(mW/cm <sup>2</sup> )	Averaging Times  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)*	30
30-300	27.5	0.073	0.2	30
300-1500	--	--	F/1500	30
1500-100000	--	--	1.0	30

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

#### 3.2 Test Data

Input Voltage: 120V/60Hz

Ambient Condition: 24°C, 50%RH

Test distance: 20 cm surrounding the device.

H-Filed Strength:

**TEST REPORT**


For one base/tray, One candle is placed on top of coil 1

Test Position	Probe Measure Result (A/m)			50% Limit (A/m)	Limit (A/m)
	Loaded candle lamp in 1% battery power	Loaded candle lamp in 50% battery power	Loaded candle lamp in 99% battery power		
Side 1	0.082	0.081	0.081	0.815	1.63
Side 2	0.051	0.051	0.050	0.815	1.63
Side 3	0.089	0.088	0.088	0.815	1.63
Side 4	0.063	0.063	0.064	0.815	1.63
Top	0.306	0.306	0.307	0.815	1.63

For one base/tray, One candle is placed on top of coil 2

Test Position	Probe Measure Result (A/m)			50% Limit (A/m)	Limit (A/m)
	Loaded candle lamp in 1% battery power	Loaded candle lamp in 50% battery power	Loaded candle lamp in 99% battery power		
Side 1	0.083	0.082	0.082	0.815	1.63
Side 2	0.053	0.052	0.052	0.815	1.63
Side 3	0.089	0.090	0.090	0.815	1.63
Side 4	0.063	0.063	0.064	0.815	1.63
Top	0.308	0.308	0.306	0.815	1.63

**TEST REPORT**

For one base/tray, One candle is placed on top of coil 3

Test Position	Probe Measure Result (A/m)			50% Limit (A/m)	Limit (A/m)
	Loaded candle lamp in 1% battery power	Loaded candle lamp in 50% battery power	Loaded candle lamp in 99% battery power		
Side 1	0.083	0.083	0.082	0.815	1.63
Side 2	0.051	0.051	0.052	0.815	1.63
Side 3	0.089	0.089	0.089	0.815	1.63
Side 4	0.063	0.063	0.063	0.815	1.63
Top	0.306	0.306	0.307	0.815	1.63

For one base/tray, One candle is placed on top of coil 4

Test Position	Probe Measure Result (A/m)			50% Limit (A/m)	Limit (A/m)
	Loaded candle lamp in 1% battery power	Loaded candle lamp in 50% battery power	Loaded candle lamp in 99% battery power		
Side 1	0.082	0.083	0.081	0.815	1.63
Side 2	0.051	0.051	0.053	0.815	1.63
Side 3	0.090	0.089	0.088	0.815	1.63
Side 4	0.064	0.063	0.064	0.815	1.63
Top	0.309	0.308	0.307	0.815	1.63

For one base/tray, One candle is placed on top of coil 5

Test Position	Probe Measure Result (A/m)			50% Limit (A/m)	Limit (A/m)
	Loaded candle lamp in 1% battery power	Loaded candle lamp in 50% battery power	Loaded candle lamp in 99% battery power		
Side 1	0.082	0.082	0.081	0.815	1.63
Side 2	0.052	0.051	0.052	0.815	1.63
Side 3	0.088	0.088	0.089	0.815	1.63
Side 4	0.064	0.064	0.063	0.815	1.63
Top	0.307	0.307	0.306	0.815	1.63

**TEST REPORT**

For one base/tray, One candle is placed on top of coil 6

Test Position	Probe Measure Result (A/m)			50% Limit (A/m)	Limit (A/m)
	Loaded candle lamp in 1% battery power	Loaded candle lamp in 50% battery power	Loaded candle lamp in 99% battery power		
Side 1	0.083	0.082	0.083	0.815	1.63
Side 2	0.051	0.052	0.052	0.815	1.63
Side 3	0.087	0.087	0.088	0.815	1.63
Side 4	0.064	0.064	0.063	0.815	1.63
Top	0.308	0.308	0.307	0.815	1.63

For one base/tray, One candle is placed on top of coil 7

Test Position	Probe Measure Result (A/m)			50% Limit (A/m)	Limit (A/m)
	Loaded candle lamp in 1% battery power	Loaded candle lamp in 50% battery power	Loaded candle lamp in 99% battery power		
Side 1	0.082	0.081	0.081	0.815	1.63
Side 2	0.051	0.051	0.050	0.815	1.63
Side 3	0.088	0.089	0.088	0.815	1.63
Side 4	0.062	0.062	0.061	0.815	1.63
Top	0.306	0.306	0.307	0.815	1.63

For one base/tray, One candle is placed on top of coil 8

Test Position	Probe Measure Result (A/m)			50% Limit (A/m)	Limit (A/m)
	Loaded candle lamp in 1% battery power	Loaded candle lamp in 50% battery power	Loaded candle lamp in 99% battery power		
Side 1	0.081	0.082	0.082	0.815	1.63
Side 2	0.051	0.052	0.051	0.815	1.63
Side 3	0.088	0.089	0.089	0.815	1.63
Side 4	0.062	0.063	0.062	0.815	1.63
Top	0.308	0.306	0.306	0.815	1.63

**TEST REPORT**

For one base/tray, fully loaded

Test Position	Probe Measure Result (A/m)			50% Limit (A/m)	Limit (A/m)
	Loaded candle lamp in 1% battery power	Loaded candle lamp in 50% battery power	Loaded candle lamp in 99% battery power		
Side 1	0.084	0.083	0.083	0.815	1.63
Side 2	0.053	0.053	0.053	0.815	1.63
Side 3	0.089	0.088	0.089	0.815	1.63
Side 4	0.066	0.065	0.065	0.815	1.63
Top	0.340	0.340	0.341	0.815	1.63

For two bases/trays, fully loaded

Test Position	Probe Measure Result (A/m)			50% Limit (A/m)	Limit (A/m)
	Loaded candle lamp in 1% battery power	Loaded candle lamp in 50% battery power	Loaded candle lamp in 99% battery power		
Side 1	0.092	0.091	0.092	0.815	1.63
Side 2	0.087	0.087	0.088	0.815	1.63
Side 3	0.129	0.128	0.128	0.815	1.63
Side 4	0.072	0.071	0.072	0.815	1.63
Top	0.358	0.357	0.357	0.815	1.63

For three bases/trays, fully loaded

Test Position	Probe Measure Result (A/m)			50% Limit (A/m)	Limit (A/m)
	Loaded candle lamp in 1% battery power	Loaded candle lamp in 50% battery power	Loaded candle lamp in 99% battery power		
Side 1	0.211	0.210	0.211	0.815	1.63
Side 2	0.162	0.161	0.161	0.815	1.63
Side 3	0.168	0.168	0.167	0.815	1.63
Side 4	0.170	0.168	0.168	0.815	1.63
Top	0.764	0.763	0.763	0.815	1.63

**TEST REPORT****4.0 Test Equipment List**

Equipment No.	Equipment	Model	Manufacturer	Cal. Due date (DD-MM-YYYY)	Last calibration date (DD-MM-YYYY)
EM007-03	Exposure Level Tester	ELT-400	Narda	07/03/2024	08/03/2023

\*\*\*\*\*End of the test report\*\*\*\*\*