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Test Report of

In Situ Temperature Measurement

Applicant:

Senior LED Limited

Building H, Wanda Industrial Zone, Zhoushi Road, Shenzhen, China

For Products:

2x2 Luminaires for Ambient Lighting of Interior Commercial Spaces

Models:

SL-35W-66-28-TG-01(3000K)

Test Date: Jul. 30, 2016

Test Item: TMP_{LED}, TMP_{PS}

Test Lab.: **LCTECH (Zhongshan) Testing Service Co., Ltd**

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Template No.: LC-RT-PL/LM79-08/02

Lab. Note: /

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1. General

1.1 Product Information

Brand Name	SeniorLED
Category	Indoor
General Application	Troffer
Primary Use	2x2 Luminaires for Ambient Lighting of Interior Commercial Spaces
Model Number	SL-35W-66-28-TG-01(3000K)
Rated Inputs	120-277V, 50/60Hz
Rated Power	35W
Rated Light output	4550lm
Declared CCT	3000K
Power Supply	MPU45D-40
LED Package, Array or Module	67-21S Series, manufactured by EVERLIGHT ELECTRONICS CO., LTD
Sample Code:	1671510302
Date of Receipt Samples	Jul. 20, 2016
Note	

1.2 Standards or methods

The following standards are partly or totally used or referenced for test:

No.	Name
ANSI/UL 1598:2008 (Secs. 19.7, 19.10-16)	Luminaires
IES LM-80:2008	Solid State Lighting Luminaires – Lumen Maintenance

1.3 Equipment list

Instrument	ID	Model name	Cal. date	Next cal. Date
AC Power supply	LC-I-923	CHP-500	2016/2/4	2017/2/3
Power analyzer	LC-I-987	APW-110N	2016/2/4	2017/2/3
Power analyzer	LC-I-928	WT210	2016/1/24	2017/1/24
Multimeter	LC-I-972	Fluke 17B	2016/8/10	2017/8/9
J thermocouple	LC-I-096	TT-J-30-SLE(200m/r)	2016/3/1	2017/2/28
Data acquisition/Switch unit	LC-I-098	34970A	2016/3/1	2017/2/28
T&H recorder	LC-I-958	DWRP-B(0)	2015/8/17	2016/8/16

2. Test Conduct and Method

The luminaire provided by the client was installed to simulate intended usage to record the maximum temperature that can be encountered under the intended use.

2.1 Ambient Condition

Test was conducted in an ambient temperature of 25 ± 5 °C. Ambient temperature variations above or below 25 °C was respectively subtracted from or added to temperatures recorded at points on the luminaire.

The ambient temperature was measured by a thermocouple which was immersed in 15 ml of mineral oil in a glass container which was placed in the horizontal plane passing through the midpoint of the luminaire 's vertical axis at a horizontal distance from the luminaire equal to at least 3 times the luminaire diameter

2.2 Temperature Stabilization

Temperatures were measured after they have stabilized when:

- (a) the test has been running for a minimum of 7.5 h; or
- (b) the test has been running for a minimum of 3 h; and
- (c) three successive readings taken at 15 min intervals are within 1 °C of one another and are not rising.

2.3 Thermocouples

Temperatures recorded at points on LED and/or driver were measured by means of thermocouples. Type J thermocouple was used. The thermocouples have conductors of 0.05mm²(30AWG), and complied with the requirements specified in ASTM MNL 12 and limits of error specified in NIST ITS 90 and ISA MC96.1.

2.4 Thermocouples contact

Thermocouples were directly in contact with the TMPLD location described in LM-80 test report and in contact with the TC location described as hottest point in driver specification. In order to gain the maximum temperature, if appropriate, more than one thermocouple were contact in these locations. For details information, please refer to clause 3.3 for the photo of thermocouple contact..

3. Test Result Summary

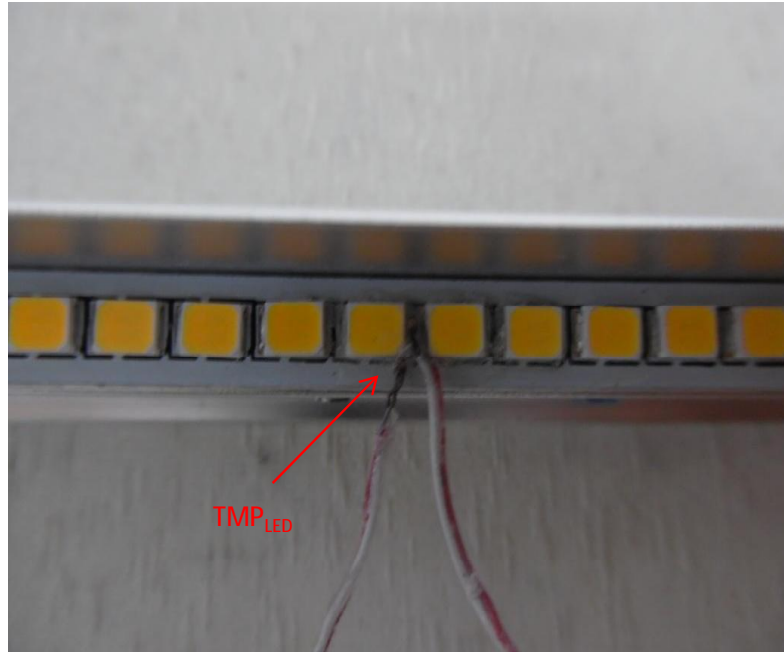
3.1 Electrical data

Criteria Item	Result
Input Voltage (V)	120.04
Input Frequency (Hz)	60
Input Current (A)	0.299
Total Power (W)	35.72
Power Factor	0.996
Current on each LED(mA)	50

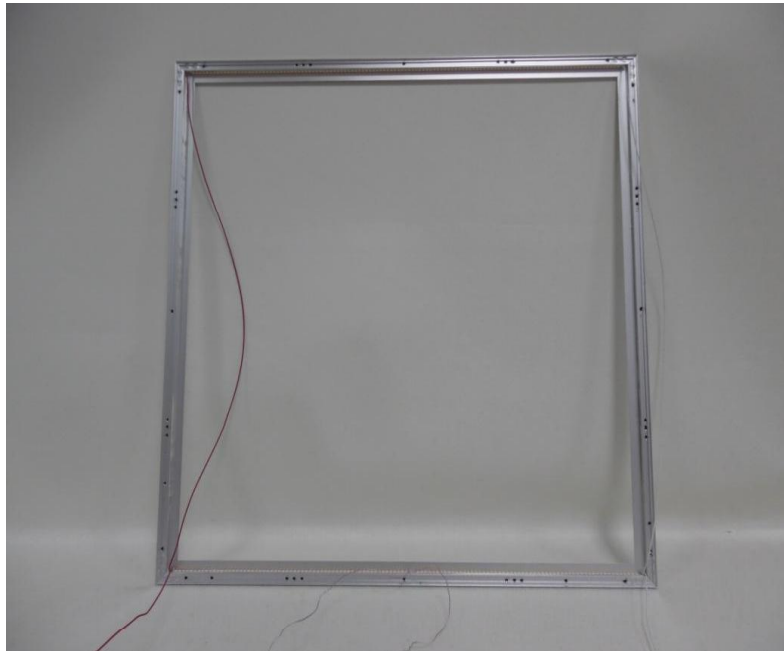
3.2 Temperature Data

Criteria Item	Result
Total Operated Period(hours)	3.6
Ambient Temperature(°C)	24.5
Measured Maximum Temperature @ TMP_{LED} (°C)	50.0
Measured Maximum Temperature @ TMP_{LED} (°C) (Normalized to 25°C)	50.5
Measured Maximum Temperature @ TMP_{ps} (°C)	40.7
Measured Maximum Temperature @ TMP_{ps} (°C) (Normalized to 25°C)	41.2

3.3 Thermocouple Contact Photo of LED

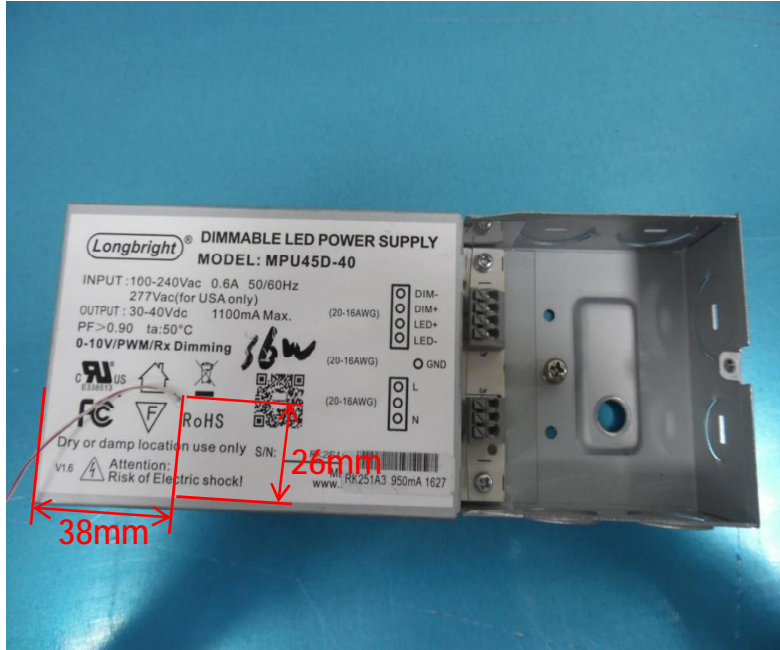


Picture 1 Part View



Picture 2 Overview

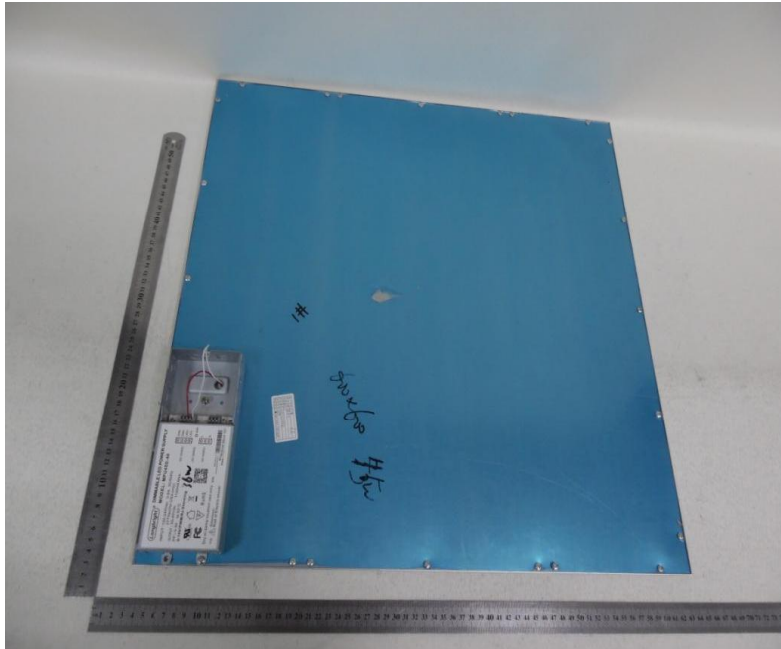
3.4 Thermocouple Contact Photo of Driver



Appendix 1 Product Photo



Picture 1



Picture 2