

## **In Situ Temperature Measurement Test Report**

For

### **LIGHT EFFICIENT DESIGN**

**(Brand Name: REMPHOS OR LIGHT EFFICIENT DESIGN)**

188 S. Northwest Highway Cary, IL 60013, USA

### **Stairwell and Passageway Luminaires**

Model name(s):

RP-LBI-G1-2F-12W-40K-W-OCN-[BAA,Blank]

Remark: OCN represents occupancy sensor and N can be a number 1 to 4 for sensor number. [BAA,Blank] where Blank represent NON-BAA,BAA represents BAA Section 1605 Compliant.

Representative (Tested) Model:

RP-LBI-G1-2F-12W-40K-W-OC1

Model Difference: All construction and rating are the same, except sensor option.

Test & Report By:

*Xeon Ren*

Engineer: Xeon Ren

Date: Nov.22,2018

Review By:

*John Li*

Manager: John Li

Note: 1. The results contained in this report pertain only to the tested samples.

2. This report does not imply product certification, approval, or endorsement by NVLAP, NIST, or any agency of the Federal Government.

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# 1 General

## 1.1 Product Information

Brand Name	REMPHOS OR LIGHT EFFICIENT DESIGN
Model Number	RP-LBI-G1-2F-12W-40K-W-OCN-[BAA,Blank]
Luminaire Type	Stairwell and Passageway Luminaires
Nominal Power	12W
Rated Initial Lamp Lumen	--
Declared CCT	4000K
LED Manufacturer	Hongli Zhihui Group Co., Ltd.
LED Model	PU2835DW-S1-08-PCT-HR3
Sample Receipt Date	Oct.25,2018
Sample Number	JDE181007-A1

**Photo**



## 1.2 Standards or methods

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

No.	Name
ANSI/UL 1598:2008	Luminaires

## 1.3 Equipment list

Equipment ID	Equipment Name	Last Calibration Date	Next Calibration Date
ST-R-411	Power Meter	2018-06-28	2019-06-27
ST-R-401	Temperature Tester	2018-01-11	2019-01-10

## 2 Test conducted and method

### 2.1 Ambient Condition

Test was conducted in an ambient temperature of  $25\pm 5^{\circ}\text{C}$ . Ambient temperature variations above or below  $25^{\circ}\text{C}$  was subtracted from or added to temperatures recorded at points on the luminaire.

The ambient temperature was measured by a thermocouple which was immersed in 15ml of mineral oil in a glass container.

### 2.2 Temperature Stabilization

Temperatures were measured after they have stabilized when the test has been running for a minimum of 7.5 hours, or the test has been running for a minimum of 3 hours and three successive reading taken at 15 minutes intervals are with  $1^{\circ}\text{C}$  of another and are not rising.

### 2.3 Thermocouples

Type J thermocouple was used for temperature measurement. The thermocouple was 0.05mm<sup>2</sup>(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 in contact with the TMP LED location described in LM-80 test report. 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 Results

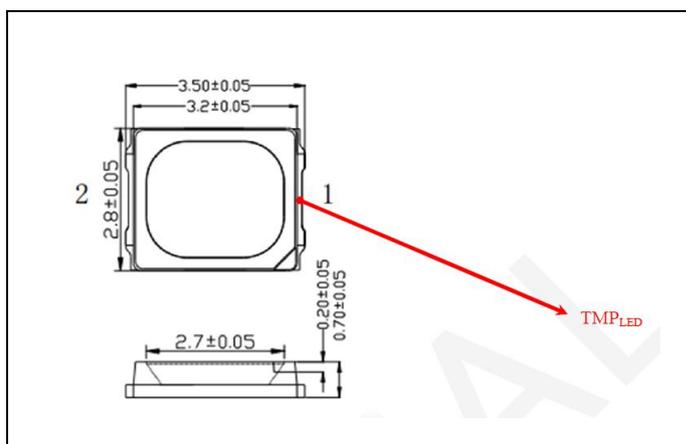
Test date	2018-10-25	Test Ambient	25.1 °C
Sample No.		LED Package Model	
JDE181007-A1		PU2835DW-S1-08-PCT-HR3	
LED driver of Each Lamp	Output voltage V	Measured LED working current (Max.) mA	
1	43.2	58.3	

### 3.1 Test Data:

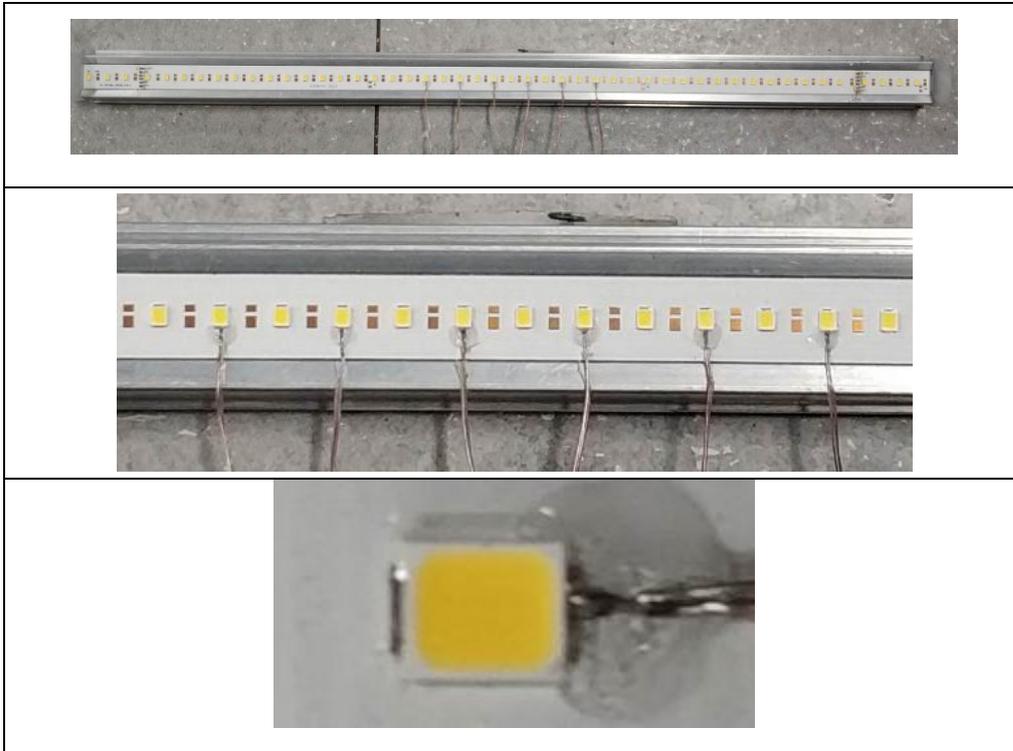
Input Vol.	120.0V	Input Current	0.1149A	Input Wattage	12.62W	Temperature stabilization time:	500 min	
No.	Temperature (°C)		No.	Temperature (°C)		No.	Temperature (°C)	
	Measured	Corrected at 25°C		Measured	Corrected at 25°C		Measured	Corrected at 25°C
1	53.0	52.9	3	52.7	52.6	5	53.3	53.2
2	52.1	52.0	4	53.9	53.8	6	52.5	52.4
The highest in-situ measured temperature LED is 53.8°C								

### 3.2 Test Photo:

Ts Position:



Thermocouple Location on Temperature Measurement Point (TMP):



Time (t) at which to estimate lumen maintenance (hours):	50,000
Lumen maintenance at time (t) (%):	92.62%
Reported L70 (hours):	>36000

Time (t) at which to estimate lumen maintenance (hours):	36,000
Lumen maintenance at time (t) (%):	94.84%
Reported L90 (hours):	>36000

**Laboratory: Standard-Tech Co. Ltd. Testing Center**  
**NVLAP CODE: 201011-0**

Report Format Number STD/QR4918-A/0

Address: Standard-Tech Building, No.6 Guanhong Road,Guangzhou Science City, Guangzhou 510663, China

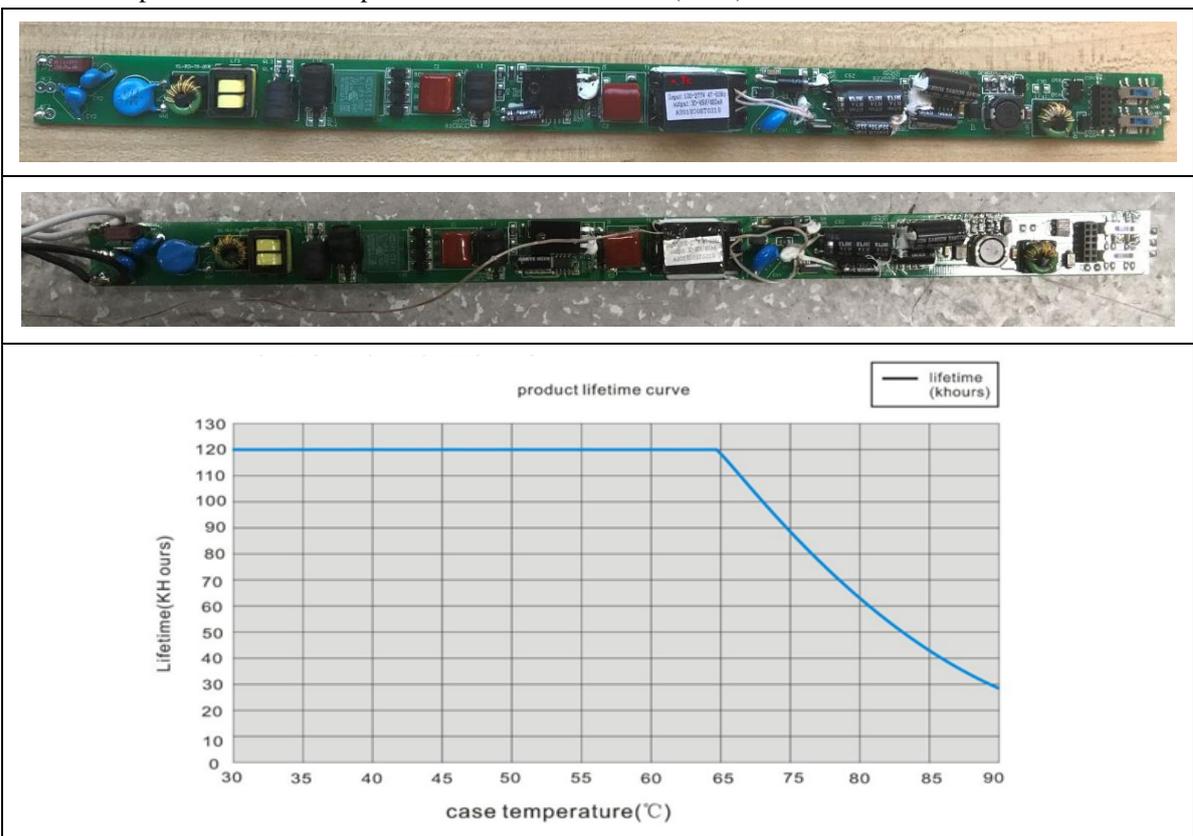
Tel: 8620-3229 0320 Fax: 8620-32290422 <http://www.standard-tech.com>

### 3.3 Test Data of LED Driver:

Input Vol.	120.0V	Input Current	0.1149A	Input Wattage	12.62W	Temperature stabilization time:	500 min
No	Measured TC Temperature (°C)			Temperature Limited of Life $\geq$ 50000 hours			
	Measured	Corrected at 25°C					
1	62.8	62.7		80			

### 3.4 Test Photo:

Thermocouple Location on Temperature Measurement Point (TMP):



\*\*\*\*\* END OF THE TEST REPORT\*\*\*\*\*