TESTING
NVLAP LAB CODE 600149-0

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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

Model name(s):

RP-LBI-G1-4F-25W-XXK-W-[Blank,OCN]-[BAA,Blank]-3xYYY

Type of Luminaire:	High Bay Luminaires for Commercial and Industrial Buildings
Report Date:	2019-02-14 Ningbo TengLi Testing Co., Ltd
Prepared By:	2nd floor, Block B, Ningbo Testing and Certification Base, No. 66 Qingyi Road, Ningbo National Hi-Tech Zone, Ningbo, Zhejiang

Test & Report By:

Xeon Ren

Engineer: Xeon Ren

Review By:

Johnson Sun

Manager: Johnson Sun

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.

Table of Contents

1 General

1.1 Product Information:

Model Number	RP-LBI-G1-4F-25W-XXK-W-[Blank,OCN] -[BAA,Blank]-3xYYY	
Remark	XXK represent CCT, can be 35K=3500K,40K=4000K, 50K=5000K. [Blank,OCN] represent sensor option, OCN represents occupancy sensor and N can be a number 1 to 4 for sensor number, Blank represents without sensor. [BAA,Blank] where Blank represent NON-BAA,BAA represents BAA Section 1605 Compliant. YYY can be three numbers or letters for different sheet metal naming.	
Representative (Tested) Model	RP-LBI-G1-4F-25W-35K-W-3xYYY RP-LBI-G1-4F-25W-50K-W-3xYYY	
Model Difference	N/A	
SKU (if available)	N/A	
Type of Luminaire (for integral lamps, list base type and lamp type)	High Bay Luminaires for Commercial and Industrial Buildings	
LED Manufacturer	Hongli Zhihui Group Co., Ltd.	
LED Model	PU2835DW-S1-08-PCT-HR3	
Dimming	Dimmable	
Sample Number	JDE181203-A1	
Date of Receipt	Jan.29, 2019	
Luminaire Aperture (for downlights)	--	in.
Luminaire Length	--	mm
Luminaires Width	--	mm
Number of Units (modular products)	N/A	s

1.2 Rated Values:

Rated Voltage / Frequency	100-277Vac, 50/60Hz
Nominal Power	75W
Rated Initial Lamp Lumen	--
Declared CCT	3500K, 4000K, 5000K

1.3 Standards or methods

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

No.	Name
ANSI/UL 1598:2008	**Luminaires**

1.4 Equipment list

Equipment ID	Equipment Name	Last Calibration Date	Next Calibration Date
ST-R-704	Power Meter	2019-01-06	2020-01-05
ST-R-607	Temperature Tester	2019-01-06	2020-01-05

2 Test conducted and method

2.1 Ambient Condition

Test was conducted in an ambient temperature of 25±5 ℃. Ambient temperature variations above or below 25 ℃ 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 ℃ of another and are not rising.

2.3 Thermocouples

Type J thermocouple was used for temperature measurement. The thermocouple was 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 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	2019-01-30	Test Ambient	25.1 ℃
Sample No.		LED Package Model	
JDE181203-A1		PU2835DW-S1-08-PCT-HR3	
LED driver of Each Lamp	Output voltage V	Measured LED working current (Max.) mA	
1	43.2	72.1	

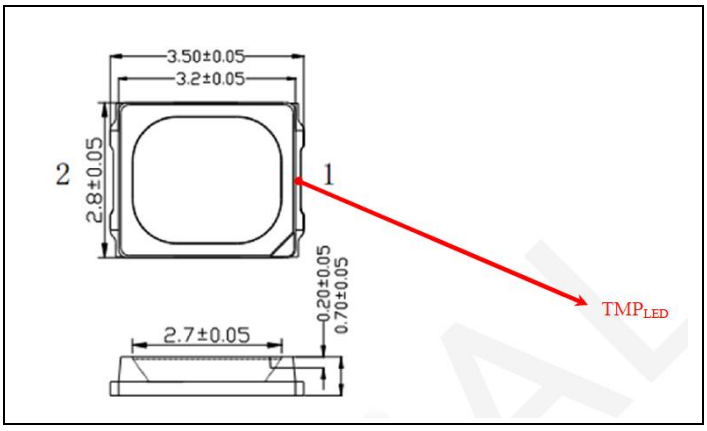
3.1 Test Data:

Input Vol.	120.0V	Input Current	0.6477A	Input Wattage	77.19W	Temperature stabilization time:	500 min

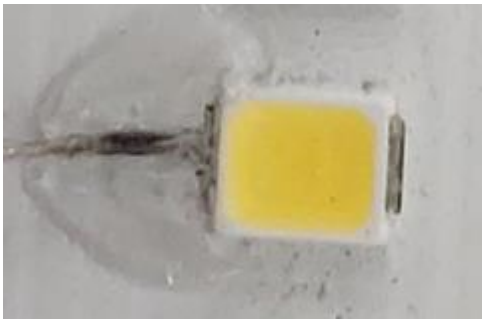
No.	Temperature (°C)		No.	Temperature (°C)		No.	Temperature (°C)	
	Measured	Corrected at 25°C		Measured	Corrected at 25°C		Measured	Corrected at 25°C
1	68.6	68.5	3	68.1	68.0	5	67.8	67.7
2	69.5	69.4	4	70.2	70.1	6	69.8	69.7
The highest in-situ measured temperature LED is 70.1°C								

3.2 Test Photo:

Ts Position:



Thermocouple Location on Temperature Measurement Point (TMP):



Results

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

Results

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

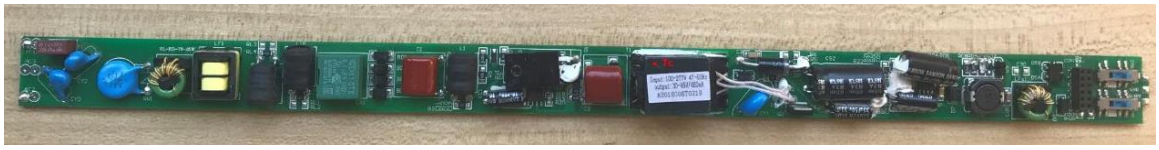
3.3 Test Data of LED Driver:

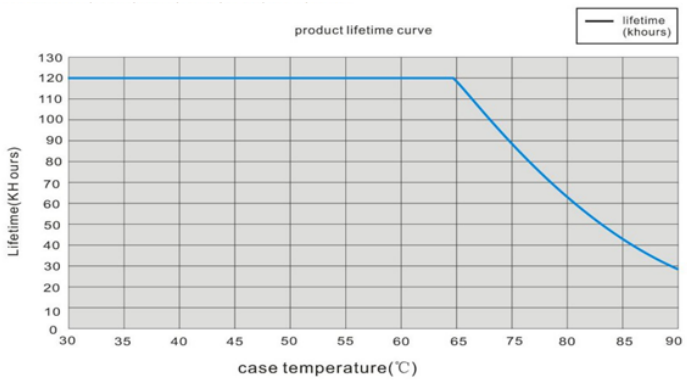
Input Vol.	120.0V	Input Current	0.6477A	Input Wattage	77.19W	Temperature stabilization time:	500 min

No	Measured TC Temperature (°C)		Temperature Limited of Life ⩾ 50000 hours
	Measured	Corrected at 25°C	
1	79.6	79.5	80

3.4 Test Photo:

Thermocouple Location on Temperature Measurement Point (TMP):





4. Product Photo

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