NVLAP LAB CODE 201011-0

In Situ Temperature Measurement Test Report

For

LIGHT EFFICIENT DESIGN

(Brand Name:N/A)

188 S. Northwest Highway Cary, IL 60013

LED Lamp

Model name(s): LED-8032MXX-A

Remark : The letter "XX" on the model name represents the color temperature,"40" stand for 4000K, "57" stand for 5700K.

Representative (Tested) Model: LED-8032M40-A

Model Different: N/A

Test & Report By:

Jack Luo

Engineer: Jack Luo

Date:May.31,2016

Review By:

Tommy Liang

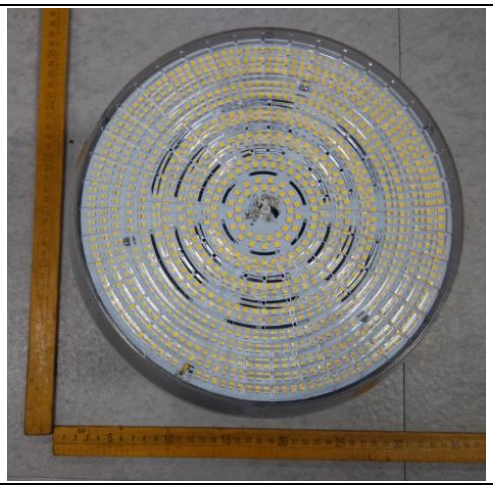
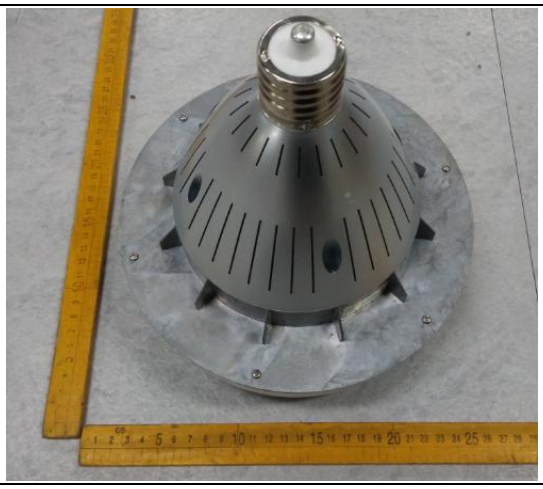
Manager: Tommy Liang

Note: 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

Brand Name	N/A
Model Number	LED-8032MXX-A
Luminaire Type	LED Lamp
Nominal Power	140W
Rated Initial Lamp Lumen	--
Declared CCT	4000K,5700K
LED Manufacturer	Guangzhou Hongli Opto-Electronic Co., Ltd.
LED Model	HL-A-2835HW-S1-08-HR3
Sample Receipt Date	Apr.01,2016
Sample Number	GZE160347-I1
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
PF210	Power Meter	2015-07-01	2016-06-30
ST-R-181A	Temperature Tester	2015-07-01	2016-06-30

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	2016-04-24	Test Ambient	25.1 ℃
Sample No.		LED Package Model	
GZE160347-I1		HL-A-2835HW-S1-08-HR3	
LED driver of Each Lamp	Output voltage V	Measured LED working current (Max.) mA	
1	75.6	51.1	

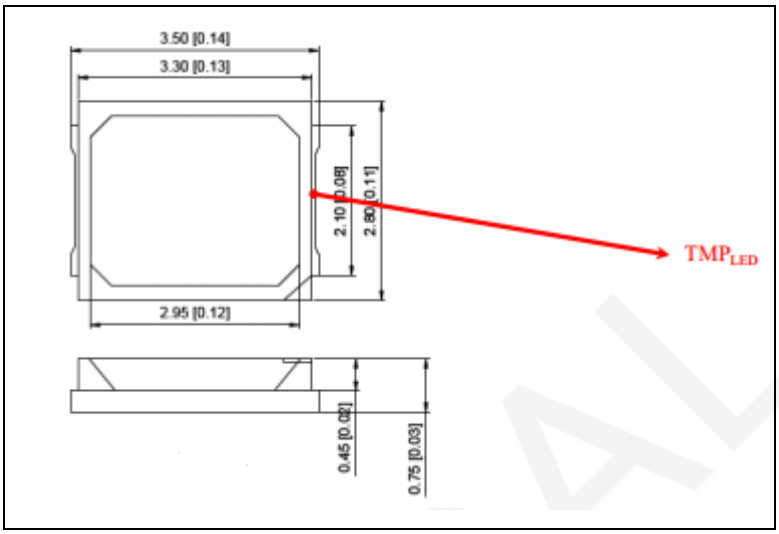
3.1 Test Data:

Input Vol.	120.0V	Input Current	1.225A	Input Wattage	144.4W	Temperature stabilization time:	500 min

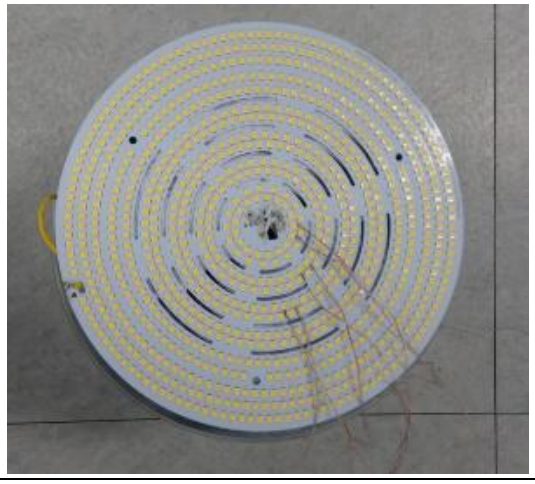
No.	Temperature (°C)		No.	Temperature (°C)		No.	Temperature (°C)	
	Measured	Corrected at 25°C		Measured	Corrected at 25°C		Measured	Corrected at 25°C
1	54.3	54.2	3	53.8	53.7	5	54.6	54.5
2	54.9	54.8	4	55.2	55.1	6	54.8	54.7
The highest in-situ measured temperature LED is 55.1°C								

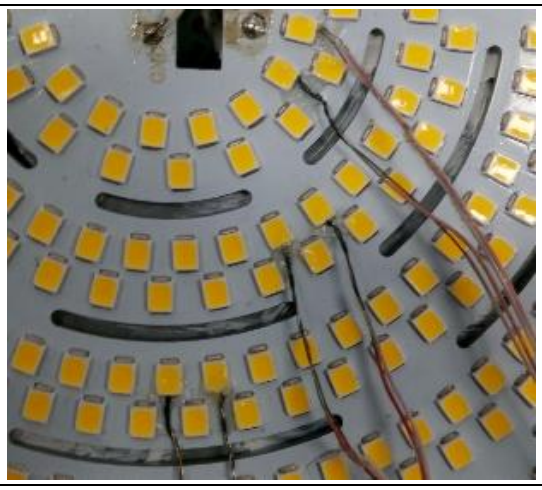
3.2 Test Photo:

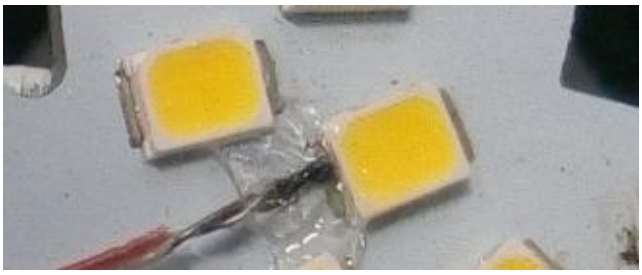
Ts Position:



Thermocouple Location on Temperature Measurement Point (TMP):







Results

Time (t) at which to estimate lumen maintenance (hours):	36,000
Lumen maintenance at time (t) (%):	82.79%
Reported L70 (hours):	>54000

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