

# ISTMT Test Report

For

## LIGHT EFFICIENT DESIGN

188 S. Northwest Highway Cary, IL 60013, USA

### Direct Linear Ambient Luminaires

Model Name(s):

RP-LBI-G1-3F-15W-XXK-WC-[Blank, OCN]-[BAA, Blank]

Representative (Tested) Model:

RP-LBI-G1-3F-15W-XXK-WC

#### Model Difference:

1. WC represents power adjustable and color tunable, wattage can adjust 10W, 12W and 15W, color tunable 2700K, 3000K and 3500K.
2. [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.
3. [BAA, Blank] is for business purpose.
4. All construction is the same, except the function.

Prepare by :

Review by:

Engineer: Derek Lai

Technical Lead: Vincent Yuan

Date: 2019-11-19

Issue Date: 2019-11-

Revised Date: N/A

- Note:
1. The results contained in this report pertain only to the tested samples.
  2. This report shall not be reproduced, no limited part or full, without approval of Dongguan New Testing Centre Co., Ltd
  3. This report does not imply product certification, approval, or endorsement by NVLAP, or any agency of the Federal Government.

**Product Information:**

Client Name:	LIGHT EFFICIENT DESIGN
Brand Name:	REMPHOS OR LIGHT EFFICIENT DESIGN
Model Number:	RP-LBI-G1-3F-15W-XXK-WC
Product Type:	Direct Linear Ambient Luminaires
Rating Input:	100-277Vac, 50/60Hz, 15W
Declared CCT:	2700K/000K/3500K
Declared Light Output:	1900 lm
Declared Lifetime:	50000 hours
LED Manufacturer:	Hongli Zhihui Group Co., Ltd.
LED Model:	HL-AS-PU2835DW-S1-08-PCT-HR3
LED Quantity:	80 pcs

**Test Information:**

Date of Receipt Samples:	2019-11-06
Quantity of Receipt Samples:	1 pcs
Sample Number:	191106002-S1

**Laboratory Information:**

Test Laboratory:	Dongguan New Testing Centre Co., Ltd
Laboratory Address:	3F, No. 1 the 1 <sup>st</sup> North Industry Road, Songshan Lake Science & Technology Park, Dongguan, Guangdong, China
Laboratory Contact Name:	Neil Zhong
Laboratory Contact E-mail:	<a href="mailto:Neil_ntc@163.com">Neil_ntc@163.com</a>

**Report Information:**

Issued Date of Test Report:	2019-11-
Revised Date of Test Report:	N/A
Test Report No.:	NTCLR19110105
Remark (If applicable):	1. All tests with the default maximum wattage, the default maximum wattage is 15W.

<b>Test Specification:</b>	
Date of Test	2019-11-08
Test Item	1. In-Situ Temperature Measured Test (ISTMT)
Reference Standard	ANSI/UL 1598-2018 Luminaire IES LM-84-14 IES Approved Method for Measuring Luminous Flux and Color Maintenance of LED Lamps, Light Engines, and Luminaires

<b>Test Methods:</b>
<p><b>1. In-Situ Temperature Measurement Test (ISTMT)</b></p> <p>According to UL 1598 and IES LM-84-14, Annex A, maximum LED source operated temperature measurements were taken on one test sample per model with a thermocouple and temperature meter. The SSL sample could reach thermal equilibrium for at least 3 hours before measurements were taken. LED source temperature was measured at the point as indicated by the included diagram in accordance with manufacturers declared hot spot location. The maximum temperature was recorded for the sample. A simulated ceiling or other enclosure may be used in accordance to UL 1598 as applicable.</p>

**In-Situ Temperature Measurement Test Results:**

**Electrical Data:**

Voltage (V)	Frequency (Hz)	Current (A)	Wattage (W)	Power Factor	Orientation	Test Time (hours)
120.0	60	0.1249	14.90	0.9942	Face Down	3.5

**Test Result:**

TC Location	Measured LED Driver Current (mA)	Temperature (°C)			Limits (°C)	TM-21 Result
		Ambient	Test Result	Corrected to 25°C		Reported (hours)
						L70
TMP <sub>LED</sub>	146.5	25.6	55.7	55.1	85	>54000

**Test Result from TM-21:**

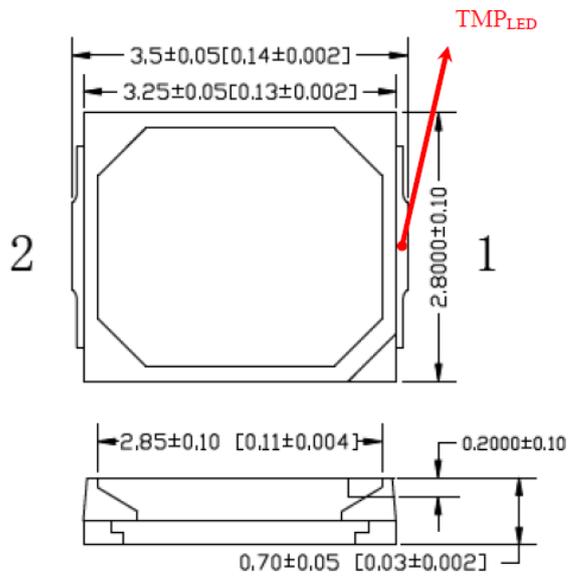
***In-Situ* Inputs**

Drive current for each LED package/array/module (mA):	146.5
<i>In-situ</i> case temperature (T <sub>c</sub> , °C):	55.1
Percentage of initial lumens to project to (e.g. for L <sub>70</sub> , enter 70):	70

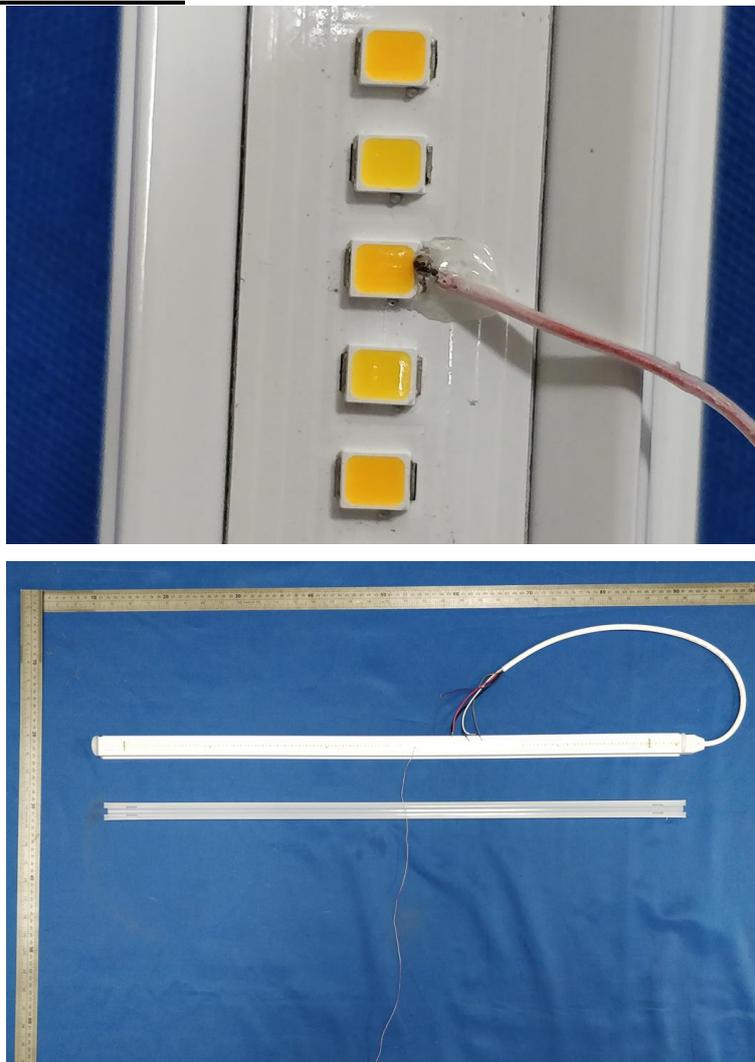
**Results**

Time (t) at which to estimate lumen maintenance (hours):	50,000
Lumen maintenance at time (t) (%):	90.25%
Reported L70 (hours):	>54000

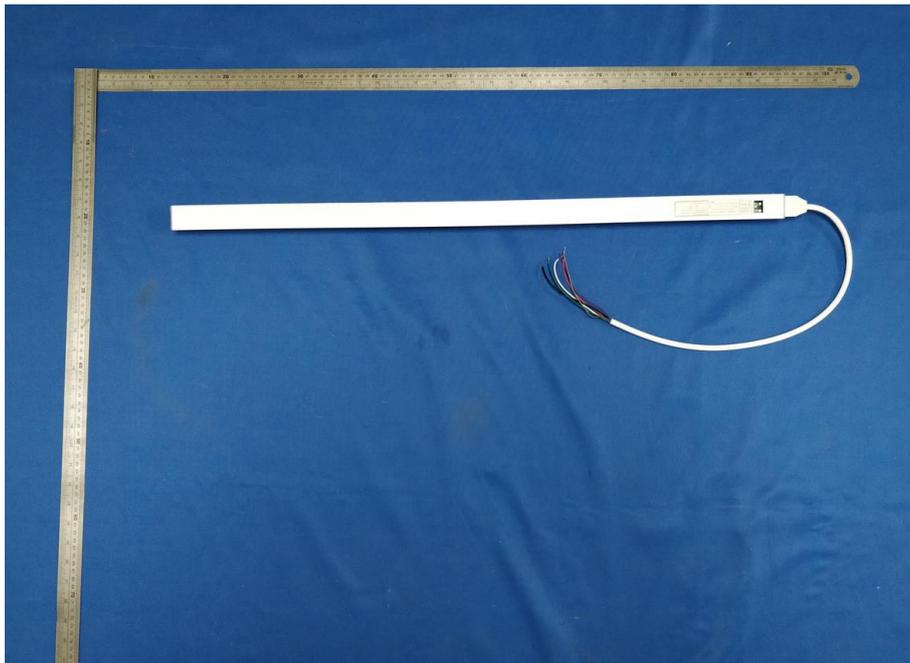
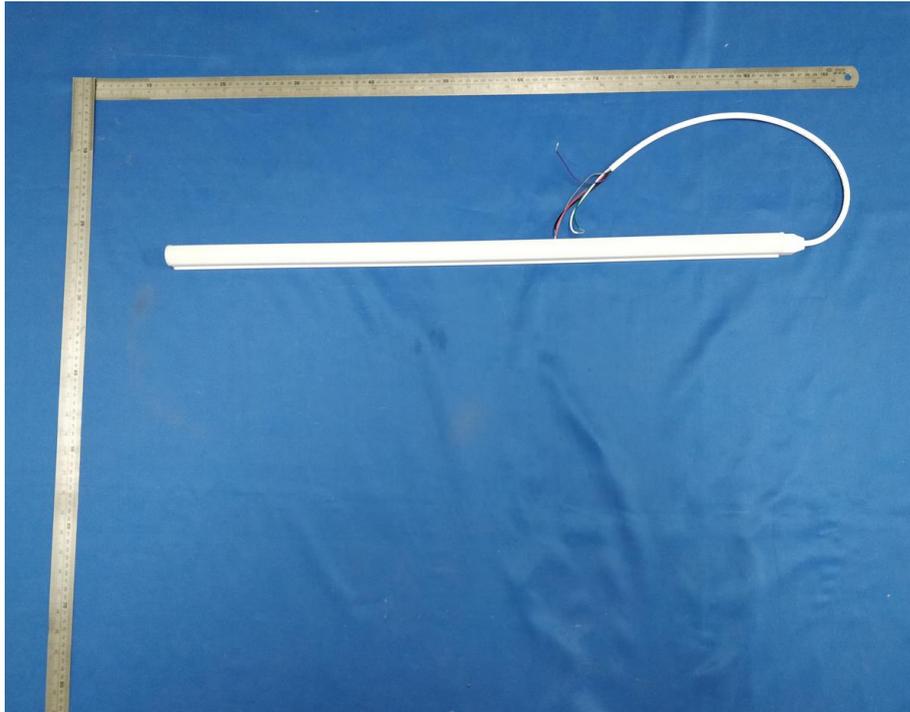
**TMP Position in LM-80:**



**Thermocouple Position on TMP:**



**Photo of Sample:**



**Equipment List:**

Equipment ID	Equipment Name	Last Cal.	Due Cal.
NTC-F01-031	Digital Power Meter	2019-08-22	2020-08-21
NTC-F01-019	Temperature & Humidity Meter	2018-11-12	2019-11-11
NTCD-S001	Temperature Data Logger	2018-11-12	2019-11-11

\*\*\*\*\***End of Report**\*\*\*\*\*