

Light is OSRAM

**OSRAM**  
Opto Semiconductors

# OSLON<sup>®</sup> Square White (CCT 2700 K – 6500 K)

IES LM-80-15 Test Report

Test Documentation No.: 190146W6 (Document No.: OSRM027-2-E3-220) – 14<sup>th</sup> Feb 2020





## LM80 17000 Hour Interval Test Report

### IES LM-80-15 Approved Method for Measuring Lumen Maintenance of LED Light Sources

**CSA Group Report: OSRM027-2-E3-220**

January 3, 2020

Manufacturer:	OSRAM
Models tested:	GW CSSRM2.EM OSLON Square
Test conditions:	24 devices @ 55.0 C, 1.050 A 24 devices @ 85.0 C, 1.050 A 24 devices @ 105.0 C, 1.050 A

Prepared for:  
OSRAM Opto Semiconductors (Malaysia) Sdn.  
Bayan Lepas Free Industrial Zone Phase 1,  
11900 Bayan Lepas, Penang, Malaysia

Attn:

Test report prepared by:

*Gabriel Trippel*

Project Engineer,  
Test and Measurement Services

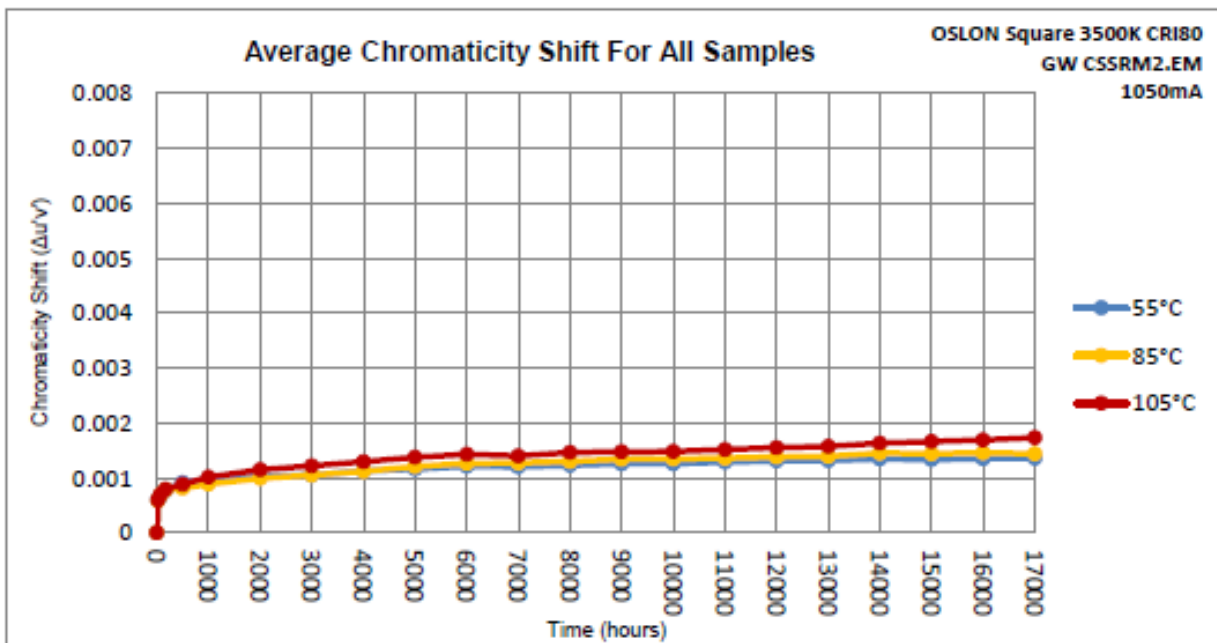
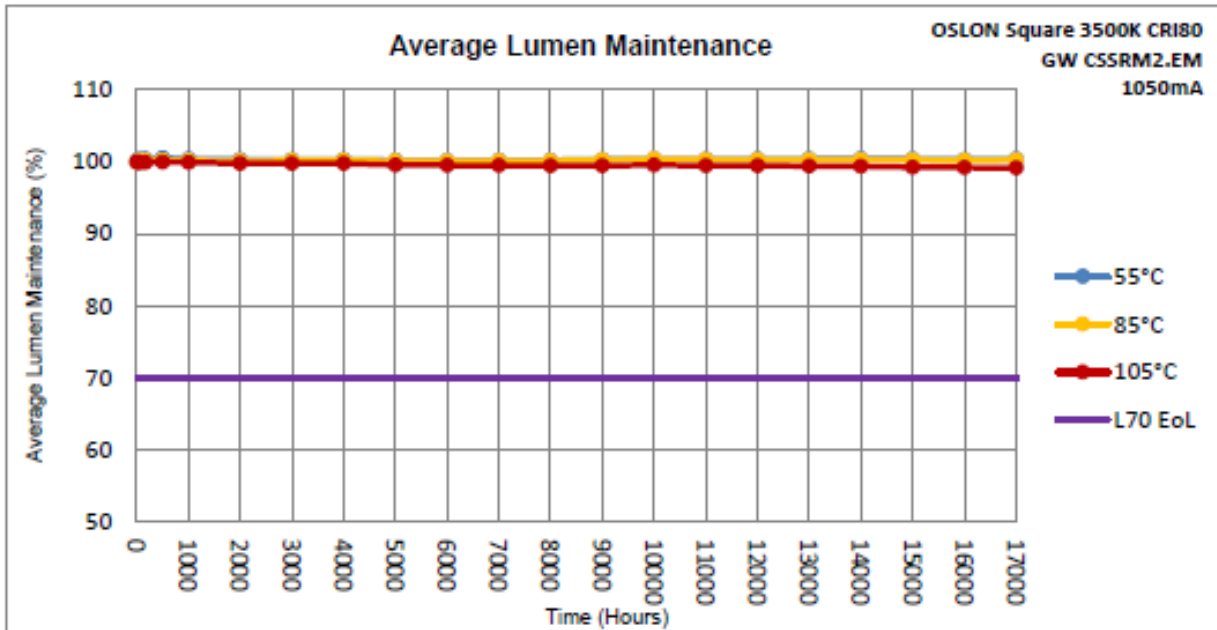
Testing performed by:  
CSA Group Seattle  
14833 NE 87th St  
Redmond, WA 98052  
425-605-8500  
[www.csagroupseattle.org](http://www.csagroupseattle.org)

Test report approved by:

*KC Fletcher*

Project Manager,  
Test and Measurement Services

5.0 Charts:



## 6.0 Additional Information

### 6.1 Auxilliary Equipment

Lifetest thermal chamber:	Orb Optronix Thermal Platform - resistive heating, liquid cooling, no forced air flow
Lifetest current source:	Orb Optronix 12-Channel Driver
Photometric test current source:	Keithley 2425
Photometric test thermal control:	Orb Optronix TEC-100
Spectrometer:	Instrument Systems, CAS 140CT
Integrating Sphere:	Gamma Scientific 20"
Photometric reference standards:	LabSphere SCL-50

### 6.2 Additional Test Information

### 6.3 Photographs



Fig. 1 OSRM027 load board example.

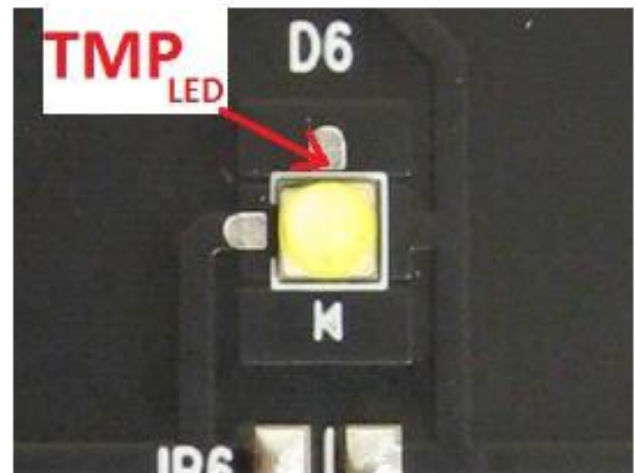


Fig. 2 OSRM027 OSLON Square white LED and temperature measurement point.

# Appendix A: Energy Star® LM-80 Application

## ENERGY STAR® LM-80 Cover Page

### Administrative Information

Tested subcomponent series	OSLON® Square
Tested subcomponent model number	GW CSSRM2.EM
Report issue date	3 <sup>rd</sup> Jan 2020
Report revision date (if applicable)	Not Applicable
Testing start date	10 <sup>th</sup> Nov 2017
Testing completion date	3 <sup>rd</sup> Jan 2020
DUT sampling method	According to ANSI/IES LM-80 Test Method

### DUT Identification

DUT manufacturer's name	OSRAM Opto Semiconductors (Malaysia) Sdn Bhd
DUT identification	GW CSSRM2.EM
Description of DUT	LED Package

### DUT Characteristics

Total input power (W)	3.72
Average current density per LED die (mA/mm <sup>2</sup> )	525.00
Average power density per LED Package (W/mm <sup>2</sup> )	0.41
Representative CRI (Ra) of the tested sample set	80
Minimum die edge to die edge spacing	Not Applicable

# Appendix B: Lumen Maintenance Projection (IES TM-21-11)

For Information Only!

## 1. General Information

Description of LED light source tested	OSLON® Square GW CSSRM2.EM
Sample size per temperature	24
LED drive current used in the test	1050 mA
Current per die	1050 mA
Test duration	17,000 hours
Test duration used for projection	8,000 hours to 17,000 hours

## 2. Projection Data

	I	II	III
Case temperature (solder point)	$T_S = 55 \text{ °C}$	$T_S = 85 \text{ °C}$	$T_S = 105 \text{ °C}$
$\alpha$	-1.366E-07	-9.007E-09	3.894E-07
B	1.002E+00	1.003E+00	9.988E-01
Reported L70	> 102,000 hours	> 102,000 hours	> 102,000 hours
Reported L80	> 102,000 hours	> 102,000 hours	> 102,000 hours
Reported L90	> 102,000 hours	> 102,000 hours	> 102,000 hours