

## Test Report – LM80-08

Qualification

### STARK-QLE-G2-1250-8x0-CLA

according to LM80-08

Report No.	LGIT-12-005
Date	27.12.2013
Company	LG Innotek

### Introduction

This document provides the results of IES LM-80-2008 (“LM-80”) testing by referring to the used LED components. Tridonic is providing this data so that the public can verify the reliability of LEDs used for the product as part of a complete LED lighting system.

Note that this document only provides the end results of the LM-80 tests. This document is subject to change without notice, so please do not link to a local copy.

This report must not be used to claim product certification, approval or any agency of the federal government.

LED Type:	STARK-QLE-G2-1250-8x0-CLA
Manufacturer:	Tridonic

Picture:	
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Test Place:	LG Innotek
Measuring devices:	Vektrex ALMS, DC power supply SS200, Spectrometer CAS-140CT, Labsphere 1m

## 1. Test Description

**1.1. Number of light sources for test:** Based on SMD package data (28 packages tested per test condition)

**1.2. Description of light sources:** LED module with 66 SMD packages on 270x270mm CEM3 PCB

**1.3. Auxiliary Equipment:** Active cooling system: Vektrex ITCS (board with water cooled heat sink to control case temperature)

**1.4. Operating Cycle:** constant direct current

**1.5. Ambient Conditions:** Air temperature is controlled to 24.6°C +/-1.3°C; R relative humidity: 44.4% +/-10.2 R.H.

**1.6. Case temperatures:** 55°C, 75°C and 85°C

**1.7. Drive current:** 390mA (65mA per package)

**1.8. Initial Performance:** see test results

**1.9. Light source monitoring interval:** 0, 500, 1000, 2000, 3000,4000, 5000 and 6000h

**1.10. Photometric Measurement uncertainty:** equipment is calibrated monthly and the calibration data ensures +/- 2% uncertainty of measurement

## 2. Test Results:

### Conditions:

T<sub>s</sub> : 55°C  
 Drive current: 390mA (65mA per package)

### Lumen maintenance:

	Initial measurement	Lumen maintenance [%]							
	Φ [lm]	0h	500h	1000h	2000h	3000h	4000h	5000h	6000h
Average	1450	100.00	101.09	101.15	101.34	101.16	100.82	100.62	100.18
Min.	1406	100.00	100.69	100.10	100.68	100.43	99.94	99.57	99.28
Max.	1480	100.00	101.44	101.56	102.19	102.11	101.86	101.62	101.27

### Chromaticity shift:

	Initial measurement		Δu'v'							
	u'	v'	0h	500h	1000h	2000h	3000h	4000h	5000h	6000h
Average	0.2570	0.5228	0.0000	0.0006	0.0007	0.0009	0.0009	0.0010	0.0011	0.0012
Min.	0.2554	0.5211	0.0000	0.0005	0.0005	0.0008	0.0008	0.0008	0.0008	0.0010
Max.	0.2595	0.5255	0.0000	0.0007	0.0008	0.0011	0.0011	0.0013	0.0013	0.0014

Conditions:

$T_s$ : 75°C  
 Drive current: 390mA (65mA per package)

Lumen maintenance:

	Initial measurement	Lumen maintenance [%]							
	$\Phi$ [lm]	0h	500h	1000h	2000h	3000h	4000h	5000h	6000h
Average	1450	100.00	101.14	100.90	100.89	100.42	100.39	98.96	98.09
Min.	1403	100.00	99.92	99.72	99.49	98.82	98.69	96.99	95.78
Max.	1481	100.00	101.89	101.94	101.89	101.42	101.29	99.89	98.98

Chromaticity shift:

	Initial measurement		$\Delta u'v'$							
	$u'$	$v'$	0h	500h	1000h	2000h	3000h	4000h	5000h	6000h
Average	0.2568	0.5227	0.0000	0.0009	0.0009	0.0010	0.0012	0.0011	0.0011	0.0012
Min.	0.2553	0.5186	0.0000	0.0006	0.0008	0.0009	0.0009	0.0009	0.0009	0.0010
Max.	0.2590	0.5253	0.0000	0.0012	0.0012	0.0013	0.0014	0.0014	0.0014	0.0016

Conditions:

$T_s$ : 85°C  
 Drive current: 390mA (65mA per package)

Lumen maintenance:

	Initial measurement	Lumen maintenance [%]							
	$\Phi$ [lm]	0h	500h	1000h	2000h	3000h	4000h	5000h	6000h
Average	1449	100.00	100.54	100.48	99.76	98.71	97.66	96.62	95.82
Min.	1399	100.00	99.68	99.47	98.46	97.21	95.87	94.41	91.76
Max.	1470	100.00	101.44	101.38	100.90	100.06	99.01	98.02	97.38

Chromaticity shift:

	Initial measurement		$\Delta u'v'$							
	$u'$	$v'$	0h	500h	1000h	2000h	3000h	4000h	5000h	6000h
Average	0.2575	0.5223	0.0000	0.0006	0.0007	0.0008	0.0007	0.0009	0.0010	0.0013
Min.	0.2556	0.5204	0.0000	0.0005	0.0005	0.0006	0.0005	0.0006	0.0007	0.0010
Max.	0.2590	0.5246	0.0000	0.0007	0.0008	0.0010	0.0013	0.0013	0.0017	0.0027