Test Report – LM80-08

Qualification

STARK-DLE-G2-xxx-xxxx-8x0-CLA

according to LM80-08

Report No.	U1204002-10
Date	19.12.2013
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-DLE-PURE-G2-LES65-2000-8x0-CLA, STARK-DLE-PURE-G2-LES65-3000-8x0-CLA, STARK-DLE-G2-LES65-2000-8x0-CLA, STARK-DLE-G2-LES65-3000-8x0-CLA
Manufacturer:	Tridonic

Picture:	 

Test Place:	Korea Laboratory Accreditation Scheme
Measuring devices:	Temperature controlling chamber (water controlled heat sink for constant case temperature), Integrating sphere and constant current source

Impressum:
Tridonic GmbH & Co KG, Färbergasse 15, 6851 Dornbirn, Austria, www.tridonic.com
Rechtsform der Gesellschaft: GmbH & Co KG | Sitz der Gesellschaft: Dornbirn | Firmenbuchnummer: FN 218728 i |
Firmenbuchgericht: Feldkirch | UID-Nr.: AT U53 377 108

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:
STARK-DLE-G2-PURE-LES65-2000-8x0-CLA: LED module with 24 SMD packages on 78x78mm Metal PCB
STARK-DLE-G2-PURE-LES65-3000-8x0-CLA: LED module with 45 SMD packages on 78x78mm Metal PCB
STARK-DLE-G2-LES65-2000-8x0-CLA: LED module with 24 SMD packages on 78x78mm Metal PCB
STARK-DLE-G2-LES65-3000-8x0-CLA: LED module with 45 SMD packages on 78x78mm Metal PCB

1.3. Auxiliary Equipment: Vektrex ITCS (Integrated Thermal Control System): Water-cooled thermal control

1.4. Operating Cycle: constant direct current

1.5. Ambient Conditions: Air temperature is controlled to 25℃ +/-1℃; Relat ive humidity: <65% R.H.

1.6. Case temperatures: 55℃, 85℃ and 95℃

1.7. Drive current: 210mA (105mA per Die)

1.8. Initial Performance: see test results

1.9. Light source monitoring interval: 0, 590, 1000, 2000, 3000, 4000, 5000 and 6000h

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

2. Test Results:

Conditions:
T_s: 55℃
Drive current: 210mA (105mA per Die)

Lumen maintenance:

	Initial measurement	Lumen maintenance [%]								TM21 calculated L70	TM21 reported L70
	Φ [lm]	0h	590h	1000h	2000h	3000h	4000h	5000h	6000h		
Average	73.49	100.0	100.39	100.39	100.35	100.24	99.87	99.12	99.80	180.000h	>36.000h
Min.	71.43	100.0	100.10	100.19	99.78	99.69	98.84	97.81	98.03		
Max.	74.53	100.0	100.76	100.77	100.84	100.83	100.43	99.91	100.79		

Chromaticity shift:

	Δu'v'							
	0h	590h	1000h	2000h	3000h	4000h	5000h	6000h
Average	0.0000	0.0009	0.0011	0.0011	0.0013	0.0015	0.0016	0.0017
Min.	0.0000	0.0008	0.0010	0.0010	0.0012	0.0014	0.0014	0.0014
Max.	0.0000	0.0010	0.0011	0.0012	0.0015	0.0018	0.0019	0.0019

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Conditions:

T_s: 85℃
Drive current: 210mA (105mA per Die)

Lumen maintenance:

	Initial measurement	Lumen maintenance [%]								TM21 calculated L70	TM21 reported L70
	Φ [lm]	0h	590h	1000h	2000h	3000h	4000h	5000h	6000h		
Average	73.44	100.0	100.21	100.26	99.80	99.82	99.57	98.91	100.10	333.000h	>36.000h
Min.	71.49	100.0	99.86	99.82	98.70	99.22	98.83	98.10	99.29		
Max.	74.90	100.0	100.83	100.84	100.53	100.64	100.25	99.71	100.80		

Chromaticity shift:

	Δu'v'							
	0h	590h	1000h	2000h	3000h	4000h	5000h	6000h
Average	0.0000	0.0009	0.0010	0.0011	0.0013	0.0013	0.0013	0.0011
Min.	0.0000	0.0009	0.0010	0.0011	0.0013	0.0013	0.0014	0.0011
Max.	0.0000	0.0010	0.0012	0.0013	0.0014	0.0015	0.0015	0.0013

Conditions:

T_s: 95℃
Drive current: 210mA (105mA per Die)

Lumen maintenance:

	Initial measurement	Lumen maintenance [%]								TM21 calculated L70	TM21 reported L70
	Φ [lm]	0h	590h	1000h	2000h	3000h	4000h	5000h	6000h		
Average	73.47	100.00	100.06	99.82	98.99	98.71	98.31	97.28	98.35	95.000h	>36.000h
Min.	71.95	100.00	99.48	99.23	97.90	97.77	97.28	96.19	97.34		
Max.	74.55	100.00	100.66	100.59	99.92	99.68	99.36	98.39	99.50		

Chromaticity shift:

	Δu'v'							
	0h	590h	1000h	2000h	3000h	4000h	5000h	6000h
Average	0.0000	0.0010	0.0011	0.0012	0.0014	0.0015	0.0014	0.0012
Min.	0.0000	0.0009	0.0009	0.0010	0.0012	0.0014	0.0013	0.0010
Max.	0.0000	0.0011	0.0012	0.0014	0.0016	0.0018	0.0016	0.0014

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