



Verification Services

Project No: 6011-001014

Report No: 6011-001014-01aR02

Test Initiated Date: 2011-05-23

Report Issued Date: 2012-04-19


Test Report

Customer Company & Address:			
FOSHAN NATIONSTAR OPTOELECTRONICS CO., LTD			
Address: No.18 South Huabao Road, Chan Cheng District, Foshan, Guangdong, P.R. China			
Post code: 528000			
Contact Person:	Li Jun Zheng		
Telephone:	0757-83980208	Fax:	0757-82100200

Manufacturer:	FOSHAN NATIONSTAR OPTOELECTRONICS CO., LTD
Country of Origin:	CHINA
Country of Export:	NA
Product Description:	TOP LED(light source)
Model Number:	3528W
Electrical Specification:	20 mA 60 mW

Test Laboratory & Address:			
UL Verification Services (Guangzhou) Co., Ltd.			
ADD: Building A1, 1F & 2F, Nansha Science and Technology Innovation Center, No. 25, South Huanshi Avenue, Nansha District, Guangzhou 511458, China			
Telephone:	+86 20 28667188	Fax:	+86 20 83486605

Receipt of Test Samples :	75	Test Period:	2011-05-23 to 2012-03-22
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Tested By	Approved By
 / Jackson Zeng	 / Raymond Shen
Test Personnel Name & Signatory	Approval Name & Signatory

The results reported herein have been performed in accordance with the laboratory's terms of accreditation. This report shall not be reproduced except in full without the written approval of the Laboratory. The results in this report apply to the test sample(s) mentioned above at the time of the testing period only and are not to be used to indicate applicability to other similar products. This report does not imply that the product(s) has met the criteria for certification.

Doc No: 10-CT-F0059

Issue No: 1.0

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Test Report

Statement of Results

Test Flow	Test Method	Sample ID (Lab)	Sample Serial No	Pass/Fail/N A
1	IES LM-80-08	1104688S1~S75	N/A	N/A

Deviation from Test Method (if any)

N/A

Remark (if any)

This report replace 6011-001014-01a and 6011-001014-01aR01, the reports 6011-001014-01a and 6011-001014-01aR01 are terminated.



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Number of LED light sources tested

See individual test reports

Description of LED light sources

LED Package(star shape), cool white

Description of auxiliary equipment

1. Everfine 0.5m_LED_R98_V3 Integrating Sphere
2. HAAS 2000 Spectrum Analyzer
3. Keithley 2430 Sourcemeter

Operating cycle

The samples were driven with a constant direct current throughout the life test.

Ambient conditions

LED packages are operated in environmental control chambers. The temperature of the ambient air around the LED packages is actively controlled by air flowing through the chamber.

Ta : See individual test reports

RH : < 55%

Air flow : < 0.8 m/s

Case and ambient temperatures

See individual test reports

LED light source monitoring interval

See individual test reports

Photometric measurement uncertainty

The uncertainty of measuring lumen is $U=1.5\%(K=2)$

Observation of LED light source failures including the failure conditions and time of failure

No failure



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Test Equipment

Equipment ID	Equipment Name	Last Calibration Date	Next Calibration Date
GVS-LE-PE005	Integrating Sphere	Before Use	Before Use
GVS-LE-FS011	Measurement Standard Lamp	08/12/2011	08/12/2012

Test Results Summary

Test Item	Lm-80 Required Temperature		Specified Temperature
	55°C	85°C	70°C
Number of LED tested	25	25	25
Drive Current (If)	20mA	20mA	20mA
Actual Case Temp. (Ts)	53.9°C	84.3°C	69.0°C
Actual Ambient Temp. (Ta)	52.7°C	82.2°C	67.4°C
$\Delta(TS-TA)$	1.2°C	2.1°C	1.6°C
Actual relative humidity	<65%RH	<65%RH	<65%RH
Average Lumen Maintenance at 6,000 hours	97.9%	98.5%	96.9%
Average Chromaticity Shift ($\Delta u'v'$) at 6,000 hours	0.0038	0.0037	0.0027

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Test Result:

Case temperature: 55°C

Actual case temperature: 53.9°C

Actual ambient temperature: 52.7°C

Drive current: If = 20mA

Measurement current: If = 20mA

No.	Φ (Im) Vf (V)		Φ (Im) & maintenance (%)													
	Oh (Initial)		500h	%	1000h	%	2000h	%	3000h	%	4000h	%	5000h	%	6000h	%
1	6.582	3.057	7.351	111.7%	7.099	107.9%	7.019	106.6%	6.822	103.6%	6.737	102.4%	6.667	101.3%	6.566	99.8%
2	6.329	3.039	6.835	108.0%	6.818	107.7%	6.568	103.8%	6.375	100.7%	5.992	94.7%	5.966	94.3%	5.972	94.4%
3	6.929	3.068	6.758	97.5%	6.869	99.1%	6.799	98.1%	6.768	97.7%	6.773	97.7%	6.622	95.6%	6.568	94.8%
4	6.553	3.053	6.853	104.6%	6.762	103.2%	6.672	101.8%	6.553	100.0%	6.441	98.3%	6.445	98.4%	6.465	98.7%
5	6.738	3.055	7.268	107.9%	7.191	106.7%	6.991	103.8%	6.862	101.8%	6.744	100.1%	6.612	98.1%	6.622	98.3%
6	6.806	3.060	7.080	104.0%	6.969	102.4%	6.919	101.7%	6.693	98.3%	6.719	98.7%	6.744	99.1%	6.735	99.0%
7	6.284	3.054	6.654	105.9%	6.588	104.8%	6.538	104.0%	6.413	102.1%	6.380	101.5%	6.257	99.6%	6.191	98.5%
8	6.774	3.056	6.652	98.2%	6.695	98.8%	6.665	98.4%	6.563	96.9%	6.520	96.3%	6.455	95.3%	6.465	95.4%
9	6.280	3.049	6.436	102.5%	6.520	103.8%	6.480	103.2%	6.349	101.1%	6.354	101.2%	6.318	100.6%	6.276	99.9%
10	6.525	3.064	6.732	103.2%	6.744	103.4%	6.704	102.7%	6.522	100.0%	6.531	100.1%	6.500	99.6%	6.484	99.4%
11	6.228	3.056	6.276	100.8%	6.574	105.6%	6.514	104.6%	6.291	101.0%	6.286	100.9%	6.301	101.2%	6.238	100.2%
12	6.544	3.052	6.851	104.7%	6.744	103.1%	6.694	102.3%	6.408	97.9%	6.418	98.1%	6.469	98.9%	6.456	98.7%
13	6.452	3.056	6.862	106.4%	6.707	104.0%	6.667	103.3%	6.425	99.6%	6.418	99.5%	6.437	99.8%	6.427	99.6%
14	6.259	3.055	6.451	103.1%	6.313	100.9%	6.283	100.4%	6.192	98.9%	6.102	97.5%	6.015	96.1%	5.999	95.8%
15	6.483	3.059	6.748	104.1%	6.487	100.1%	6.488	100.1%	6.352	98.0%	6.386	98.5%	6.428	99.2%	6.393	98.6%
16	6.645	3.045	6.737	101.4%	6.487	97.6%	6.498	97.8%	6.478	97.5%	6.385	96.1%	6.355	95.6%	6.323	95.2%
17	6.471	3.051	6.384	98.7%	6.333	97.9%	6.313	97.6%	6.334	97.9%	6.412	99.1%	6.243	96.5%	6.233	96.3%
18	6.228	3.059	6.244	100.3%	6.083	97.7%	6.072	97.5%	5.984	96.1%	6.174	99.1%	6.055	97.2%	6.076	97.6%
19	6.666	3.049	6.377	95.7%	6.315	94.7%	6.313	94.7%	6.302	94.5%	6.452	96.8%	6.549	98.2%	6.545	98.2%
20	6.672	3.048	6.905	103.5%	6.798	101.9%	6.768	101.4%	6.655	99.7%	6.721	100.7%	6.708	100.5%	6.656	99.8%
21	6.300	3.062	6.447	102.3%	6.278	99.7%	6.266	99.5%	6.229	98.9%	6.306	100.1%	6.394	101.5%	6.289	99.8%
22	6.717	3.047	7.045	104.9%	6.621	98.6%	6.602	98.3%	6.419	95.6%	6.502	96.8%	6.552	97.5%	6.498	96.7%
23	6.548	3.064	6.642	101.4%	6.483	99.0%	6.481	99.0%	6.393	97.6%	6.274	95.8%	6.342	96.9%	6.311	96.4%
24	6.616	3.049	6.856	103.6%	6.590	99.6%	6.578	99.4%	6.492	98.1%	6.561	99.2%	6.666	100.8%	6.631	100.2%
25	6.197	3.050	6.281	101.4%	6.284	101.4%	6.267	101.1%	6.117	98.7%	6.087	98.2%	5.980	96.5%	5.972	96.4%
Average	6.513	3.054	6.709	103.0%	6.614	101.6%	6.566	100.8%	6.440	98.9%	6.427	98.7%	6.403	98.3%	6.376	97.9%
Median	6.544	3.055	6.737	103.2%	6.590	101.4%	6.568	101.1%	6.413	98.7%	6.418	98.7%	6.437	98.4%	6.427	98.5%
σ	0.207	0.007	0.299	3.5%	0.268	3.4%	0.236	2.8%	0.212	2.1%	0.212	2.0%	0.225	2.1%	0.218	1.9%
Max.	6.929	3.068	7.351	111.7%	7.191	107.9%	7.019	106.6%	6.862	103.6%	6.773	102.4%	6.744	101.5%	6.735	100.2%
Min.	6.197	3.039	6.244	95.7%	6.083	94.7%	6.072	94.7%	5.984	94.5%	5.992	94.7%	5.966	94.3%	5.972	94.4%

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No.	u'	v	u'	v	u'	v	u'	v	u'	v	u'	v	u'	v	u'	v
	0h (Initial)		500h		1000h		2000h		3000h		4000h		5000h		6000h	
1	0.2013	0.4811	0.2011	0.4858	0.2020	0.4853	0.2017	0.4849	0.2019	0.4846	0.2019	0.4847	0.2020	0.4846	0.2020	0.4848
2	0.2012	0.4805	0.2004	0.4866	0.2014	0.4834	0.2013	0.4836	0.2010	0.4778	0.2011	0.4758	0.2008	0.4753	0.2014	0.4755
3	0.2008	0.4888	0.2002	0.4908	0.2013	0.4885	0.2012	0.4878	0.2011	0.4864	0.2011	0.4852	0.2011	0.4844	0.2014	0.4844
4	0.2003	0.4846	0.1999	0.4852	0.2012	0.4845	0.2011	0.4849	0.2009	0.4854	0.2013	0.4848	0.2014	0.4850	0.2013	0.4852
5	0.2001	0.4878	0.2002	0.4886	0.2013	0.4877	0.2012	0.4872	0.2011	0.4869	0.2013	0.4864	0.2014	0.4859	0.2009	0.4852
6	0.2017	0.4890	0.2016	0.4918	0.2025	0.4891	0.2027	0.4890	0.2022	0.4878	0.2024	0.4869	0.2026	0.4871	0.2025	0.4863
7	0.1998	0.4871	0.1998	0.4878	0.2006	0.4866	0.2008	0.4865	0.2004	0.4853	0.2005	0.4840	0.2006	0.4840	0.2003	0.4839
8	0.2010	0.4852	0.2000	0.4868	0.2012	0.4844	0.2012	0.4839	0.2010	0.4833	0.2011	0.4820	0.2011	0.4814	0.2011	0.4811
9	0.1999	0.4866	0.1995	0.4881	0.2009	0.4874	0.2010	0.4876	0.2006	0.4846	0.2007	0.4835	0.2005	0.4827	0.2007	0.4822
10	0.1996	0.4895	0.1990	0.4894	0.2004	0.4886	0.2003	0.4888	0.2000	0.4877	0.2001	0.4865	0.2000	0.4861	0.2000	0.4852
11	0.1996	0.4872	0.1983	0.4853	0.2002	0.4867	0.2003	0.4859	0.1998	0.4833	0.1999	0.4821	0.1999	0.4820	0.2000	0.4817
12	0.2013	0.4874	0.2008	0.4889	0.2019	0.4876	0.2018	0.4883	0.2018	0.4858	0.2019	0.4847	0.2019	0.4847	0.2017	0.4841
13	0.1999	0.4856	0.1992	0.4864	0.2004	0.4854	0.2007	0.4846	0.2001	0.4832	0.2001	0.4820	0.2000	0.4817	0.2001	0.4812
14	0.2002	0.4873	0.1989	0.4869	0.2001	0.4843	0.2001	0.4842	0.2000	0.4847	0.2002	0.4838	0.2005	0.4848	0.2003	0.4837
15	0.2010	0.4853	0.2000	0.4866	0.2012	0.4837	0.2018	0.4836	0.2009	0.4867	0.2011	0.4869	0.2011	0.4872	0.2011	0.4877
16	0.2008	0.4886	0.1997	0.4888	0.2009	0.4862	0.2008	0.4861	0.2009	0.4863	0.2011	0.4853	0.2012	0.4859	0.2013	0.4855
17	0.1996	0.4835	0.1981	0.4818	0.1996	0.4808	0.1999	0.4804	0.1993	0.4860	0.1995	0.4855	0.2001	0.4874	0.1999	0.4879
18	0.2000	0.4812	0.2003	0.4819	0.2013	0.4787	0.2015	0.4785	0.2010	0.4773	0.2013	0.4762	0.2014	0.4763	0.2015	0.4759
19	0.2013	0.4815	0.1998	0.4808	0.2006	0.4784	0.2009	0.4777	0.2005	0.4769	0.2009	0.4769	0.2010	0.4763	0.2014	0.4753
20	0.2014	0.4811	0.2003	0.4856	0.2014	0.4844	0.2011	0.4846	0.2012	0.4840	0.2013	0.4842	0.2016	0.4852	0.2016	0.4858
21	0.2011	0.4858	0.1998	0.4888	0.2009	0.4863	0.2010	0.4865	0.2007	0.4853	0.2010	0.4847	0.2010	0.4845	0.2010	0.4841
22	0.2018	0.4793	0.2011	0.4818	0.2019	0.4816	0.2016	0.4817	0.2017	0.4763	0.2020	0.4754	0.2021	0.4752	0.2022	0.4755
23	0.2013	0.4877	0.2000	0.4882	0.2011	0.4883	0.2012	0.4888	0.2008	0.4862	0.2008	0.4847	0.2010	0.4850	0.2008	0.4847
24	0.2036	0.4794	0.2014	0.4854	0.2026	0.4834	0.2025	0.4835	0.2025	0.4829	0.2026	0.4822	0.2028	0.4831	0.2023	0.4837
25	0.2015	0.4841	0.2003	0.4867	0.2012	0.4856	0.2011	0.4859	0.2010	0.4862	0.2010	0.4863	0.2010	0.4865	0.2009	0.4868
Average	0.2008	0.4850	0.2000	0.4866	0.2011	0.4851	0.2012	0.4850	0.2009	0.4840	0.2010	0.4832	0.2011	0.4833	0.2011	0.4831
Median	0.2010	0.4856	0.2000	0.4867	0.2012	0.4854	0.2011	0.4849	0.2009	0.4853	0.2011	0.4847	0.2011	0.4846	0.2011	0.4841
σ	0.0009	0.0032	0.0009	0.0028	0.0007	0.0029	0.0007	0.0030	0.0007	0.0034	0.0008	0.0035	0.0008	0.0037	0.0007	0.0038
Max.	0.2036	0.4895	0.2016	0.4918	0.2026	0.4891	0.2027	0.4890	0.2025	0.4878	0.2026	0.4869	0.2028	0.4874	0.2025	0.4879
Min.	0.1996	0.4793	0.1981	0.4808	0.1996	0.4784	0.1999	0.4777	0.1993	0.4763	0.1995	0.4754	0.1999	0.4752	0.1999	0.4753

No.	Δu'v	Δu'v	Δu'v	Δu'v	Δu'v	Δu'v	Δu'v
	500h	1000h	2000h	3000h	4000h	5000h	6000h
1	0.0047	0.0043	0.0038	0.0036	0.0036	0.0036	0.0038
2	0.0062	0.0029	0.0031	0.0027	0.0047	0.0052	0.0050
3	0.0021	0.0006	0.0011	0.0024	0.0036	0.0044	0.0044
4	0.0007	0.0009	0.0009	0.0010	0.0010	0.0012	0.0012
5	0.0008	0.0012	0.0013	0.0013	0.0018	0.0023	0.0027
6	0.0028	0.0008	0.0010	0.0013	0.0022	0.0021	0.0028
7	0.0007	0.0009	0.0012	0.0019	0.0032	0.0032	0.0032
8	0.0019	0.0008	0.0013	0.0019	0.0032	0.0038	0.0041
9	0.0016	0.0013	0.0015	0.0021	0.0032	0.0039	0.0045
10	0.0006	0.0012	0.0010	0.0018	0.0030	0.0034	0.0043
11	0.0023	0.0008	0.0015	0.0039	0.0051	0.0052	0.0055
12	0.0016	0.0006	0.0010	0.0017	0.0028	0.0028	0.0033
13	0.0011	0.0005	0.0013	0.0024	0.0036	0.0039	0.0044
14	0.0014	0.0030	0.0031	0.0026	0.0035	0.0025	0.0036
15	0.0016	0.0016	0.0019	0.0014	0.0016	0.0019	0.0024
16	0.0011	0.0024	0.0025	0.0023	0.0033	0.0027	0.0031
17	0.0023	0.0027	0.0031	0.0025	0.0020	0.0039	0.0044
18	0.0008	0.0028	0.0031	0.0040	0.0052	0.0051	0.0055
19	0.0017	0.0032	0.0038	0.0047	0.0046	0.0052	0.0062
20	0.0046	0.0033	0.0035	0.0029	0.0031	0.0041	0.0047
21	0.0033	0.0005	0.0007	0.0006	0.0011	0.0013	0.0017
22	0.0026	0.0023	0.0024	0.0030	0.0039	0.0041	0.0038
23	0.0014	0.0006	0.0011	0.0016	0.0030	0.0027	0.0030
24	0.0064	0.0041	0.0042	0.0037	0.0030	0.0038	0.0045
25	0.0029	0.0015	0.0018	0.0022	0.0023	0.0025	0.0028
Average	0.0023	0.0018	0.0020	0.0024	0.0031	0.0034	0.0038
Median	0.0017	0.0013	0.0015	0.0023	0.0032	0.0036	0.0038
σ	0.0016	0.0012	0.0011	0.0010	0.0011	0.0012	0.0012
Max.	0.0064	0.0043	0.0042	0.0047	0.0052	0.0052	0.0062
Min.	0.0006	0.0005	0.0007	0.0006	0.0010	0.0012	0.0012

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Case temperature: 70°C

Actual case temperature: 69.0°C
 Actual ambient temperature: 67.4°C
 Drive current: If = 20mA
 Measurement current: If = 20mA

No.	Φ (lm)		Φ (lm) & maintenance (%)													
	Oh (Initial)	Vf (V)	500h	%	1000h	%	2000h	%	3000h	%	4000h	%	5000h	%	6000h	%
26	6.530	3.058	6.535	100.1%	6.466	99.0%	6.457	98.9%	6.444	98.7%	6.372	97.6%	6.252	95.7%	6.265	95.9%
27	6.016	3.055	6.023	100.1%	5.898	98.0%	5.899	98.1%	5.885	97.8%	6.115	101.6%	6.013	100.0%	6.018	100.0%
28	6.709	3.048	6.714	100.1%	6.636	98.9%	6.634	98.9%	6.595	98.3%	6.486	96.7%	6.426	95.8%	6.396	95.3%
29	6.202	3.044	6.498	104.8%	6.331	102.1%	6.323	101.9%	6.133	98.9%	6.096	98.3%	6.004	96.8%	6.012	96.9%
30	7.004	3.047	7.091	101.2%	6.959	99.4%	6.923	98.8%	6.831	97.5%	6.710	95.8%	6.596	94.2%	6.596	94.2%
31	6.966	3.067	6.918	99.3%	6.908	99.2%	6.878	98.7%	6.853	98.4%	6.711	96.3%	6.719	96.5%	6.678	95.9%
32	6.636	3.057	6.646	100.2%	6.694	100.9%	6.664	100.4%	6.546	98.6%	6.524	98.3%	6.405	96.5%	6.389	96.3%
33	6.304	3.060	6.409	101.7%	6.616	104.9%	6.589	104.5%	6.358	100.9%	6.351	100.7%	6.306	100.0%	6.271	99.5%
34	6.697	3.064	6.874	102.6%	6.627	99.0%	6.612	98.7%	6.545	97.7%	6.486	96.8%	6.461	96.5%	6.396	95.5%
35	6.288	3.059	6.490	103.2%	6.469	102.9%	6.425	102.2%	6.362	101.2%	6.347	100.9%	6.121	97.3%	6.082	96.7%
36	6.226	3.065	6.306	101.3%	6.350	102.0%	6.314	101.4%	6.212	99.8%	6.053	97.2%	6.110	98.1%	6.066	97.4%
37	6.072	3.081	6.454	106.3%	6.349	104.6%	6.303	103.8%	6.101	100.5%	5.973	98.4%	5.898	97.1%	5.846	96.3%
38	6.602	3.051	6.619	100.3%	6.502	98.5%	6.480	98.1%	6.432	97.4%	6.438	97.5%	6.363	96.4%	6.323	95.8%
39	6.512	3.064	6.641	102.0%	6.588	101.2%	6.522	100.2%	6.432	98.8%	6.393	98.2%	6.326	97.1%	6.278	96.4%
40	6.209	2.995	6.253	100.7%	6.308	101.6%	6.267	100.9%	6.201	99.9%	6.186	99.6%	6.064	97.7%	6.072	97.8%
41	6.616	3.056	6.656	100.6%	6.486	98.0%	6.452	97.5%	6.419	97.0%	6.376	96.4%	6.346	95.9%	6.313	95.4%
42	6.496	3.056	6.644	102.3%	6.332	97.5%	6.324	97.3%	6.285	96.8%	6.316	97.2%	6.292	96.9%	6.252	96.2%
43	7.097	3.061	7.010	98.8%	6.959	98.1%	6.906	97.3%	6.881	97.0%	6.939	97.8%	6.830	96.2%	6.781	95.5%
44	6.111	3.058	6.028	98.6%	6.122	100.2%	6.103	99.9%	6.042	98.9%	6.110	100.0%	6.039	98.8%	6.014	98.4%
45	5.949	3.055	6.351	106.8%	6.580	110.6%	6.408	107.7%	6.219	104.5%	6.112	102.7%	6.122	102.9%	5.973	100.4%
46	6.738	3.047	7.265	107.8%	7.049	104.6%	6.972	103.5%	6.787	100.7%	6.760	100.3%	6.711	99.6%	6.631	98.4%
47	6.577	3.067	6.786	103.2%	6.718	102.1%	6.702	101.9%	6.534	99.3%	6.476	98.5%	6.455	98.1%	6.382	97.0%
48	6.473	3.053	6.536	101.0%	6.529	100.9%	6.504	100.5%	6.400	98.9%	6.320	97.6%	6.283	97.1%	6.239	96.4%
49	6.708	3.062	6.779	101.1%	6.550	97.6%	6.542	97.5%	6.450	96.2%	6.504	97.0%	6.456	96.2%	6.392	95.3%
50	6.305	3.051	6.452	102.3%	6.492	103.0%	6.415	101.7%	6.392	101.4%	6.347	100.7%	6.305	100.0%	6.257	99.2%
Average	6.482	3.055	6.599	101.8%	6.541	101.0%	6.505	100.4%	6.414	99.0%	6.380	98.5%	6.316	97.5%	6.277	96.9%
Median	6.512	3.057	6.619	101.2%	6.529	100.9%	6.480	100.2%	6.419	98.8%	6.372	98.2%	6.306	97.1%	6.271	96.4%
σ	0.309	0.015	0.300	2.4%	0.262	3.0%	0.254	2.6%	0.254	1.8%	0.238	1.8%	0.239	1.9%	0.235	1.6%
Max.	7.097	3.081	7.265	107.8%	7.049	110.6%	6.972	107.7%	6.881	104.5%	6.939	102.7%	6.830	102.9%	6.781	100.4%
Min.	5.949	2.995	6.023	98.6%	5.898	97.5%	5.899	97.3%	5.885	96.2%	5.973	95.8%	5.898	94.2%	5.846	94.2%

Doc No: 10-CT-F0059

Issue No: 1.0

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NVLAP Lab Code: 200952-0

Verification Services

Project No: 6011-001014

Report No: 6011-001014-01aR02

Test Initiated Date: 2011-05-23

Report Issued Date: 2012-04-19

Test Report

No.	u'	v	u'	v	u'	v	u'	v	u'	v	u'	v	u'	v	u'	v
	0h (Initial)		500h		1000h		2000h		3000h		4000h		5000h		6000h	
26	0.2022	0.4854	0.2008	0.4882	0.2017	0.4858	0.2015	0.4865	0.2017	0.4868	0.2019	0.4868	0.2022	0.4875	0.2020	0.4882
27	0.2011	0.4834	0.1997	0.4852	0.2006	0.4824	0.2007	0.4821	0.2003	0.4821	0.2015	0.4855	0.2012	0.4853	0.2003	0.4859
28	0.2007	0.4864	0.1994	0.4888	0.2004	0.4874	0.2003	0.4878	0.2003	0.4883	0.2004	0.4887	0.2002	0.4884	0.1998	0.4894
29	0.2016	0.4812	0.2004	0.4832	0.2013	0.4818	0.2011	0.4819	0.2012	0.4825	0.2010	0.4831	0.2010	0.4829	0.2013	0.4836
30	0.1999	0.4861	0.1986	0.4894	0.1997	0.4883	0.1996	0.4888	0.1996	0.4887	0.1994	0.4882	0.1997	0.4882	0.1991	0.4898
31	0.2019	0.4825	0.2003	0.4854	0.2014	0.4837	0.2013	0.4844	0.2013	0.4856	0.2013	0.4856	0.2013	0.4855	0.2014	0.4856
32	0.2026	0.4840	0.2008	0.4866	0.2018	0.4849	0.2015	0.4855	0.2019	0.4849	0.2020	0.4833	0.2018	0.4825	0.2019	0.4822
33	0.2022	0.4798	0.2010	0.4842	0.2018	0.4827	0.2017	0.4822	0.2016	0.4812	0.2019	0.4811	0.2017	0.4808	0.2017	0.4811
34	0.2004	0.4828	0.1990	0.4862	0.1999	0.4841	0.1998	0.4844	0.1997	0.4839	0.1998	0.4821	0.2000	0.4833	0.1998	0.4842
35	0.2013	0.4838	0.1995	0.4884	0.2008	0.4862	0.2007	0.4865	0.2008	0.4857	0.2010	0.4861	0.2013	0.4867	0.2010	0.4876
36	0.2020	0.4833	0.2001	0.4855	0.2012	0.4846	0.2008	0.4848	0.2012	0.4836	0.2013	0.4818	0.2011	0.4811	0.2011	0.4817
37	0.2020	0.4787	0.2007	0.4840	0.2019	0.4827	0.2017	0.4823	0.2018	0.4816	0.2023	0.4810	0.2021	0.4809	0.2025	0.4811
38	0.2000	0.4813	0.1980	0.4831	0.1994	0.4825	0.1996	0.4827	0.1993	0.4805	0.1994	0.4793	0.1999	0.4791	0.1999	0.4790
39	0.2016	0.4847	0.1999	0.4881	0.2010	0.4872	0.2008	0.4871	0.2010	0.4856	0.2009	0.4837	0.2007	0.4830	0.2011	0.4814
40	0.2023	0.4809	0.2004	0.4841	0.2014	0.4826	0.2015	0.4833	0.2011	0.4818	0.2013	0.4813	0.2012	0.4807	0.2015	0.4818
41	0.2017	0.4840	0.2000	0.4875	0.2011	0.4871	0.2012	0.4876	0.2008	0.4856	0.2008	0.4857	0.2007	0.4855	0.2012	0.4857
42	0.2022	0.4793	0.2002	0.4827	0.2013	0.4822	0.2012	0.4826	0.2010	0.4817	0.2014	0.4812	0.2012	0.4807	0.2012	0.4809
43	0.2004	0.4809	0.1988	0.4839	0.1998	0.4833	0.1999	0.4838	0.1996	0.4821	0.1997	0.4829	0.1996	0.4824	0.1999	0.4828
44	0.2040	0.4782	0.2010	0.4835	0.2021	0.4826	0.2020	0.4826	0.2020	0.4806	0.2021	0.4803	0.2021	0.4808	0.2025	0.4816
45	0.2017	0.4836	0.2001	0.4839	0.2015	0.4845	0.2013	0.4844	0.2013	0.4818	0.2015	0.4807	0.2013	0.4806	0.2013	0.4803
46	0.2028	0.4828	0.2006	0.4878	0.2015	0.4878	0.2017	0.4877	0.2013	0.4858	0.2012	0.4855	0.2012	0.4855	0.2015	0.4856
47	0.2030	0.4805	0.2003	0.4849	0.2015	0.4860	0.2013	0.4861	0.2012	0.4846	0.2010	0.4844	0.2012	0.4853	0.2013	0.4855
48	0.2021	0.4822	0.1995	0.4885	0.2006	0.4883	0.2007	0.4882	0.2004	0.4866	0.2007	0.4868	0.2006	0.4870	0.2010	0.4879
49	0.2033	0.4755	0.2011	0.4810	0.2025	0.4788	0.2022	0.4789	0.2023	0.4777	0.2024	0.4776	0.2026	0.4781	0.2029	0.4782
50	0.2019	0.4745	0.2005	0.4788	0.2015	0.4796	0.2013	0.4799	0.2013	0.4777	0.2016	0.4781	0.2015	0.4777	0.2014	0.4732
Average	0.2018	0.4818	0.2000	0.4853	0.2011	0.4843	0.2010	0.4845	0.2010	0.4835	0.2011	0.4832	0.2011	0.4832	0.2011	0.4834
Median	0.2019	0.4825	0.2002	0.4852	0.2013	0.4841	0.2012	0.4844	0.2012	0.4836	0.2013	0.4831	0.2012	0.4829	0.2013	0.4828
σ	0.0010	0.0030	0.0008	0.0026	0.0008	0.0026	0.0007	0.0027	0.0008	0.0029	0.0008	0.0030	0.0008	0.0031	0.0009	0.0038
Max.	0.2040	0.4864	0.2011	0.4894	0.2025	0.4883	0.2022	0.4888	0.2023	0.4887	0.2024	0.4887	0.2026	0.4884	0.2029	0.4898
Min.	0.1999	0.4745	0.1980	0.4788	0.1994	0.4788	0.1996	0.4789	0.1993	0.4777	0.1994	0.4776	0.1996	0.4777	0.1991	0.4732

No.	Δu/v	Δu/v	Δu/v	Δu/v	Δu/v	Δu/v	Δu/v
	500h	1000h	2000h	3000h	4000h	5000h	6000h
26	0.0031	0.0006	0.0013	0.0015	0.0014	0.0021	0.0028
27	0.0023	0.0011	0.0014	0.0015	0.0021	0.0019	0.0026
28	0.0027	0.0010	0.0015	0.0019	0.0023	0.0021	0.0031
29	0.0023	0.0007	0.0009	0.0014	0.0020	0.0018	0.0024
30	0.0035	0.0022	0.0027	0.0026	0.0022	0.0021	0.0038
31	0.0033	0.0013	0.0020	0.0032	0.0032	0.0031	0.0031
32	0.0032	0.0012	0.0019	0.0011	0.0009	0.0017	0.0019
33	0.0046	0.0029	0.0025	0.0015	0.0013	0.0011	0.0014
34	0.0037	0.0014	0.0017	0.0013	0.0009	0.0006	0.0015
35	0.0049	0.0025	0.0028	0.0020	0.0023	0.0029	0.0038
36	0.0029	0.0015	0.0019	0.0009	0.0017	0.0024	0.0018
37	0.0055	0.0040	0.0036	0.0029	0.0023	0.0022	0.0025
38	0.0027	0.0013	0.0015	0.0011	0.0021	0.0022	0.0023
39	0.0038	0.0026	0.0025	0.0011	0.0012	0.0019	0.0033
40	0.0037	0.0019	0.0025	0.0015	0.0011	0.0011	0.0012
41	0.0039	0.0032	0.0036	0.0018	0.0019	0.0018	0.0018
42	0.0039	0.0030	0.0034	0.0027	0.0021	0.0017	0.0019
43	0.0034	0.0025	0.0029	0.0014	0.0021	0.0017	0.0020
44	0.0061	0.0048	0.0048	0.0031	0.0028	0.0032	0.0037
45	0.0016	0.0009	0.0009	0.0018	0.0029	0.0030	0.0033
46	0.0055	0.0052	0.0050	0.0034	0.0031	0.0031	0.0031
47	0.0052	0.0057	0.0059	0.0045	0.0044	0.0051	0.0053
48	0.0068	0.0063	0.0062	0.0047	0.0048	0.0050	0.0058
49	0.0059	0.0034	0.0036	0.0024	0.0023	0.0027	0.0027
50	0.0045	0.0051	0.0054	0.0033	0.0036	0.0032	0.0014
Average	0.0040	0.0027	0.0029	0.0022	0.0023	0.0024	0.0027
Median	0.0037	0.0025	0.0025	0.0018	0.0021	0.0021	0.0026
σ	0.0013	0.0017	0.0015	0.0010	0.0010	0.0010	0.0011
Max.	0.0068	0.0063	0.0062	0.0047	0.0048	0.0051	0.0058
Min.	0.0016	0.0006	0.0009	0.0009	0.0009	0.0006	0.0012

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Verification Services

Project No: 6011-001014

Report No: 6011-001014-01aR02

Test Initiated Date: 2011-05-23

Report Issued Date: 2012-04-19

Test Report

Case temperature: 85°C

Actual case temperature: 84.3°C
 Actual ambient temperature: 82.2°C
 Drive current: If = 20mA
 Measurement current: If = 20mA

No.	Φ (Im)		Φ (Im) & maintenance (%)													
	Oh (Initial)	Vf (V)	500h	%	1000h	%	2000h	%	3000h	%	4000h	%	5000h	%	6000h	%
51	5.744	3.057	5.780	100.6%	5.990	104.3%	5.948	103.5%	5.859	102.0%	5.765	100.4%	5.739	99.9%	5.706	99.3%
52	5.612	3.057	5.647	100.6%	5.664	100.9%	5.655	100.8%	5.589	99.6%	5.534	98.6%	5.473	97.5%	5.427	96.7%
53	5.948	3.065	5.680	95.5%	5.748	96.6%	5.735	96.4%	5.658	95.1%	5.710	96.0%	5.709	96.0%	5.662	95.2%
54	5.867	2.995	5.903	100.6%	6.111	104.2%	6.102	104.0%	6.078	103.6%	5.976	101.9%	6.037	102.9%	5.981	101.9%
55	5.939	2.994	5.974	100.6%	5.996	101.0%	5.989	100.8%	5.982	100.7%	5.772	97.2%	5.788	97.5%	5.755	96.9%
56	5.571	3.059	5.985	107.4%	5.865	105.3%	5.801	104.1%	5.674	101.8%	5.564	99.9%	5.543	99.5%	5.501	98.7%
57	5.624	3.044	5.660	100.6%	5.966	106.1%	5.957	105.9%	5.929	105.4%	5.974	106.2%	5.887	104.7%	5.817	103.4%
58	5.824	2.989	5.861	100.6%	6.050	103.9%	6.034	103.6%	5.979	102.7%	5.988	102.8%	5.978	102.6%	5.918	101.6%
59	6.471	3.066	6.429	99.4%	6.442	99.5%	6.436	99.5%	6.333	97.9%	6.382	98.6%	6.376	98.5%	6.319	97.7%
60	5.797	3.066	6.335	109.3%	6.477	111.7%	6.354	109.6%	6.310	108.8%	6.339	109.3%	6.289	108.5%	6.144	106.0%
61	6.066	3.060	6.102	100.6%	6.273	103.4%	6.274	103.4%	6.235	102.8%	6.203	102.3%	6.114	100.8%	6.102	100.6%
62	6.019	3.051	6.043	100.4%	6.030	100.2%	6.002	99.7%	5.903	98.1%	6.009	99.8%	6.029	100.2%	5.936	98.6%
63	6.436	3.061	6.500	101.0%	6.387	99.2%	6.319	98.2%	6.266	97.4%	6.254	97.2%	6.212	96.5%	6.148	95.5%
64	6.256	3.057	6.295	100.6%	6.433	102.8%	6.424	102.7%	6.383	102.0%	6.325	101.1%	6.307	100.8%	6.258	100.0%
65	6.371	3.065	6.348	99.6%	6.418	100.7%	6.407	100.6%	6.304	98.9%	6.096	95.7%	6.061	95.1%	6.053	95.0%
66	5.800	3.053	5.837	100.6%	5.930	102.2%	5.923	102.1%	5.915	102.0%	5.818	100.3%	5.805	100.1%	5.803	100.1%
67	5.963	3.059	5.998	100.6%	6.241	104.7%	6.205	104.1%	6.112	102.5%	6.063	101.7%	5.913	99.2%	5.923	99.3%
68	6.450	3.060	6.490	100.6%	6.381	98.9%	6.359	98.6%	6.272	97.2%	6.229	96.6%	6.145	95.3%	6.156	95.4%
69	6.202	2.992	5.910	95.3%	6.033	97.3%	6.024	97.1%	5.958	96.1%	5.918	95.4%	5.923	95.5%	5.901	95.1%
70	6.701	3.066	6.601	98.5%	6.501	97.0%	6.490	96.8%	6.411	95.7%	6.342	94.6%	6.317	94.3%	6.313	94.2%
71	6.484	2.978	6.526	100.6%	6.414	98.9%	6.403	98.7%	6.356	98.0%	6.351	97.9%	6.388	98.5%	6.304	97.2%
72	5.749	3.064	5.786	100.6%	6.085	105.8%	6.078	105.7%	6.093	106.0%	6.127	106.6%	6.101	106.1%	6.031	104.9%
73	5.950	3.053	5.989	100.7%	5.848	98.3%	5.845	98.2%	5.843	98.2%	5.806	97.6%	5.813	97.7%	5.814	97.7%
74	6.572	3.064	6.696	101.9%	6.590	100.3%	6.578	100.1%	6.435	97.9%	6.327	96.3%	6.236	94.9%	6.191	94.2%
75	6.268	3.071	6.176	98.5%	6.433	102.6%	6.402	102.1%	6.297	100.5%	6.192	98.8%	6.104	97.4%	6.081	97.0%
Average	6.067	3.046	6.102	100.6%	6.172	101.8%	6.150	101.5%	6.087	100.4%	6.043	99.7%	6.011	99.2%	5.970	98.5%
Median	5.963	3.059	5.998	100.6%	6.111	101.0%	6.102	100.8%	6.093	100.5%	6.063	98.8%	6.037	98.5%	5.981	97.7%
σ	0.330	0.029	0.316	2.8%	0.264	3.5%	0.260	3.2%	0.252	3.4%	0.256	3.7%	0.251	3.6%	0.244	3.3%
Max.	6.701	3.071	6.696	109.3%	6.590	111.7%	6.578	109.6%	6.435	108.8%	6.382	109.3%	6.388	108.5%	6.319	106.0%
Min.	5.571	2.978	5.647	95.3%	5.664	96.6%	5.655	96.4%	5.589	95.1%	5.534	94.6%	5.473	94.3%	5.427	94.2%

Doc No: 10-CT-F0059

Issue No: 1.0

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NVLAP Lab Code: 200952-0

Verification Services

Project No: 6011-001014

Report No: 6011-001014-01aR02

Test Initiated Date: 2011-05-23

Report Issued Date: 2012-04-19

Test Report

No.	u'	v	u'	v	u'	v	u'	v	u'	v	u'	v	u'	v	u'	v
	0h (Initial)	500h		1000h		2000h		3000h		4000h		5000h		6000h		
51	0.2021	0.4753	0.1998	0.4777	0.2014	0.4768	0.2011	0.4769	0.2010	0.4751	0.2014	0.4769	0.2010	0.4768	0.2011	0.4772
52	0.2021	0.4741	0.2008	0.4757	0.2020	0.4739	0.2021	0.4749	0.2015	0.4732	0.2020	0.4731	0.2015	0.4728	0.2016	0.4717
53	0.2032	0.4738	0.2005	0.4745	0.2017	0.4728	0.2013	0.4729	0.2013	0.4678	0.2014	0.4673	0.2011	0.4673	0.2010	0.4678
54	0.2033	0.4745	0.2007	0.4779	0.2023	0.4772	0.2025	0.4777	0.2020	0.4762	0.2020	0.4765	0.2016	0.4761	0.2014	0.4768
55	0.2029	0.4736	0.2008	0.4766	0.2019	0.4758	0.2017	0.4759	0.2017	0.4749	0.2020	0.4765	0.2016	0.4761	0.2015	0.4763
56	0.2018	0.4741	0.2014	0.4751	0.2027	0.4735	0.2024	0.4733	0.2017	0.4728	0.2020	0.4711	0.2016	0.4706	0.2016	0.4702
57	0.2049	0.4693	0.2029	0.4725	0.2042	0.4710	0.2043	0.4714	0.2034	0.4664	0.2033	0.4654	0.2031	0.4651	0.2033	0.4647
58	0.2021	0.4753	0.1995	0.4801	0.2009	0.4796	0.2008	0.4793	0.2007	0.4783	0.2007	0.4769	0.2005	0.4774	0.2007	0.4776
59	0.2033	0.4742	0.2017	0.4795	0.2030	0.4778	0.2027	0.4773	0.2025	0.4763	0.2025	0.4764	0.2022	0.4762	0.2025	0.4769
60	0.2014	0.4764	0.2002	0.4817	0.2013	0.4799	0.2011	0.4797	0.2011	0.4789	0.2010	0.4778	0.2006	0.4775	0.2008	0.4782
61	0.2009	0.4782	0.1987	0.4802	0.1999	0.4791	0.1999	0.4793	0.1997	0.4778	0.1996	0.4761	0.1993	0.4758	0.1997	0.4751
62	0.2012	0.4783	0.1984	0.4823	0.2015	0.4822	0.2017	0.4821	0.2008	0.4799	0.2008	0.4799	0.2005	0.4800	0.2007	0.4807
63	0.2015	0.4755	0.2004	0.4804	0.2014	0.4794	0.2013	0.4797	0.2009	0.4782	0.2009	0.4787	0.2006	0.4782	0.2007	0.4791
64	0.2018	0.4779	0.2001	0.4810	0.2010	0.4803	0.2011	0.4801	0.2008	0.4767	0.2008	0.4753	0.2005	0.4752	0.2008	0.4750
65	0.2038	0.4716	0.2019	0.4772	0.2029	0.4761	0.2025	0.4766	0.2026	0.4749	0.2027	0.4745	0.2024	0.4745	0.2024	0.4752
66	0.2028	0.4736	0.2006	0.4776	0.2018	0.4765	0.2017	0.4766	0.2013	0.4746	0.2017	0.4747	0.2013	0.4745	0.2011	0.4751
67	0.2024	0.4743	0.2015	0.4793	0.2015	0.4791	0.2015	0.4792	0.2012	0.4791	0.2017	0.4797	0.2012	0.4794	0.2014	0.4795
68	0.2026	0.4726	0.2005	0.4782	0.2018	0.4792	0.2015	0.4784	0.2012	0.4783	0.2017	0.4787	0.2012	0.4785	0.2013	0.4788
69	0.2033	0.4731	0.2015	0.4781	0.2026	0.4790	0.2024	0.4788	0.2021	0.4745	0.2017	0.4749	0.2012	0.4746	0.2012	0.4749
70	0.2043	0.4721	0.2027	0.4774	0.2033	0.4774	0.2032	0.4771	0.2028	0.4774	0.2017	0.4777	0.2013	0.4775	0.2014	0.4776
71	0.2022	0.4779	0.2006	0.4789	0.2016	0.4795	0.2013	0.4793	0.2012	0.4759	0.2017	0.4727	0.2012	0.4725	0.2013	0.4722
72	0.2030	0.4760	0.2000	0.4798	0.2018	0.4785	0.2019	0.4788	0.2016	0.4749	0.2017	0.4739	0.2012	0.4734	0.2011	0.4731
73	0.2032	0.4737	0.2017	0.4787	0.2026	0.4761	0.2022	0.4766	0.2022	0.4755	0.2023	0.4755	0.2017	0.4749	0.2018	0.4762
74	0.2011	0.4774	0.2001	0.4821	0.2011	0.4806	0.2010	0.4805	0.2008	0.4787	0.2005	0.4789	0.2002	0.4785	0.2002	0.4792
75	0.2018	0.4720	0.2006	0.4785	0.2020	0.4784	0.2012	0.4788	0.2015	0.4766	0.2015	0.4775	0.2012	0.4775	0.2013	0.4778
Average	0.2025	0.4746	0.2008	0.4784	0.2019	0.4776	0.2018	0.4776	0.2015	0.4757	0.2016	0.4755	0.2012	0.4752	0.2013	0.4755
Median	0.2024	0.4742	0.2006	0.4785	0.2018	0.4784	0.2017	0.4784	0.2013	0.4762	0.2017	0.4764	0.2012	0.4761	0.2013	0.4763
σ	0.0010	0.0023	0.0010	0.0024	0.0009	0.0027	0.0009	0.0025	0.0008	0.0032	0.0008	0.0035	0.0008	0.0035	0.0007	0.0038
Max.	0.2049	0.4783	0.2029	0.4823	0.2042	0.4822	0.2043	0.4821	0.2034	0.4799	0.2033	0.4799	0.2031	0.4800	0.2033	0.4807
Min.	0.2009	0.4693	0.1987	0.4725	0.1999	0.4710	0.1999	0.4714	0.1997	0.4664	0.1996	0.4654	0.1993	0.4651	0.1997	0.4647

No.	Δu/v 500h	Δu/v 1000h	Δu/v 2000h	Δu/v 3000h	Δu/v 4000h	Δu/v 5000h	Δu/v 6000h
51	0.0033	0.0017	0.0019	0.0011	0.0017	0.0019	0.0021
52	0.0021	0.0002	0.0008	0.0011	0.0010	0.0014	0.0025
53	0.0028	0.0018	0.0021	0.0063	0.0067	0.0068	0.0064
54	0.0043	0.0029	0.0033	0.0021	0.0024	0.0023	0.0030
55	0.0037	0.0024	0.0026	0.0018	0.0030	0.0028	0.0030
56	0.0011	0.0011	0.0010	0.0013	0.0030	0.0035	0.0039
57	0.0038	0.0018	0.0022	0.0033	0.0042	0.0046	0.0049
58	0.0055	0.0045	0.0042	0.0033	0.0021	0.0026	0.0027
59	0.0055	0.0036	0.0032	0.0022	0.0023	0.0023	0.0028
60	0.0054	0.0035	0.0033	0.0025	0.0015	0.0014	0.0019
61	0.0030	0.0013	0.0015	0.0013	0.0025	0.0029	0.0033
62	0.0041	0.0039	0.0038	0.0016	0.0016	0.0018	0.0025
63	0.0050	0.0039	0.0042	0.0028	0.0033	0.0028	0.0037
64	0.0035	0.0025	0.0023	0.0016	0.0028	0.0030	0.0031
65	0.0059	0.0046	0.0052	0.0035	0.0031	0.0032	0.0039
66	0.0046	0.0031	0.0032	0.0018	0.0016	0.0017	0.0023
67	0.0051	0.0049	0.0049	0.0049	0.0054	0.0052	0.0053
68	0.0060	0.0066	0.0059	0.0059	0.0062	0.0061	0.0063
69	0.0053	0.0059	0.0058	0.0018	0.0024	0.0026	0.0028
70	0.0055	0.0054	0.0051	0.0055	0.0062	0.0062	0.0062
71	0.0019	0.0017	0.0017	0.0022	0.0052	0.0055	0.0058
72	0.0048	0.0028	0.0030	0.0018	0.0025	0.0032	0.0035
73	0.0052	0.0025	0.0031	0.0021	0.0020	0.0019	0.0029
74	0.0048	0.0032	0.0031	0.0013	0.0016	0.0014	0.0020
75	0.0066	0.0064	0.0068	0.0046	0.0055	0.0055	0.0058
Average	0.0044	0.0033	0.0032	0.0027	0.0032	0.0033	0.0037
Median	0.0048	0.0031	0.0031	0.0021	0.0025	0.0028	0.0031
σ	0.0014	0.0017	0.0015	0.0015	0.0017	0.0016	0.0015
Max.	0.0066	0.0066	0.0068	0.0063	0.0067	0.0068	0.0064
Min.	0.0011	0.0002	0.0008	0.0011	0.0010	0.0014	0.0019

Doc No: 10-CT-F0059

Issue No: 1.0

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Verification Services

Project No: 6011-001014

Report No: 6011-001014-01aR02

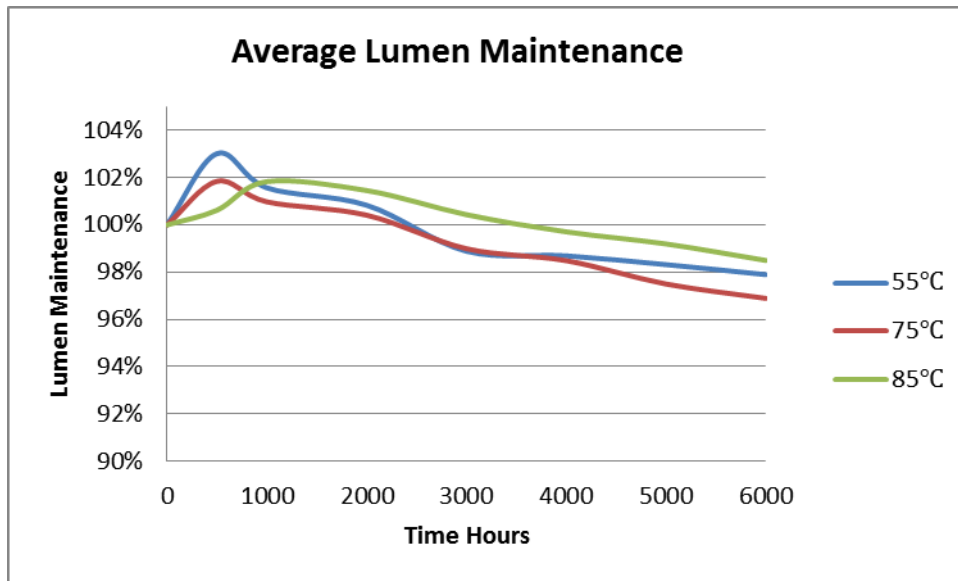
Test Initiated Date: 2011-05-23

Report Issued Date: 2012-04-19

Test Report

TM-21 Report:

Test Condition 1 - 55°C Case Temp		Test Condition 2 - 70°C Case Temp		Test Condition 3 - 85°C Case Temp	
Sample size	25	Sample size	25	Sample size	25
Number of failures	0	Number of failures	0	Number of failures	0
DUT drive current used in the test (mA)	20	DUT drive current used in the test (mA)	20	DUT drive current used in the test (mA)	20
Test duration (hours)	6,000	Test duration (hours)	6,000	Test duration (hours)	6,000
Test duration used for projection (hour to hour)	1,000 - 6,000	Test duration used for projection (hour to hour)	1,000 - 6,000	Test duration used for projection (hour to hour)	1,000 - 6,000
Tested case temperature (°C)	55	Tested case temperature (°C)	70	Tested case temperature (°C)	85
α	7.491E-06	α	8.578E-06	α	6.896E-06
B	1.020	B	1.019	B	1.026
Calculated L70(6k) (hours)	50,000	Calculated L70(6k) (hours)	44,000	Calculated L70(6k) (hours)	55,000
Reported L70(6k) (hours)	>36000	Reported L70(6k) (hours)	>36000	Reported L70(6k) (hours)	>36000



Doc No: 10-CT-F0059

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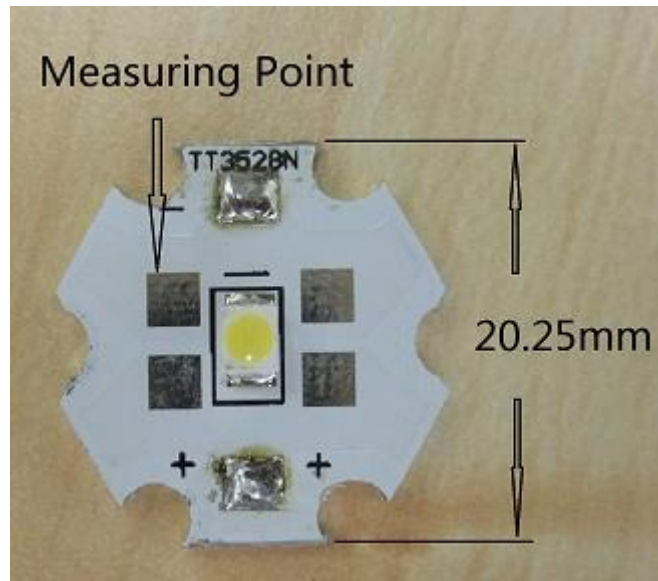


Verification Services

Project No: 6011-001014
Report No: 6011-001014-01aR02
Test Initiated Date: 2011-05-23
Report Issued Date: 2012-04-19

Test Report

Photo of Sample:



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