Guangdong Meide Testing Technology Co., Ltd.

TESTING
NVLAP LAB CODE:600177-0

TEST REPORT OF ANSI/IES LM-80-15

Approved Method for Measuring Luminous Flux and Color Maintenance of LED Packages,Arrays and Modules

Client.....	:	Zhongshan Guangsheng Semiconductor Technology Co., Ltd.
Address.....	:	Floor 2-3,Building 2，Qifang Industrial Park,Pinghe Road,Tongyi Industrial district, Guzhen Town, Zhongshan City,China
Model.....	:	GSCOBWC-300W12X2-SH1308
Brand Name.....	:	LED 光圣半导体科技
Testing Laboratory....	:	Guangdong Meide Testing Technology Co., Ltd.
Address.....	:	1st floor, B Area, Jinbaisheng Industrial Park, Headquarters 2 Road,SongshanLake Hi-tech Industrial Development Zone,Dongguan City,Guangdong Pr., China.
Testing Location.....	:	As above
Report No.....	:	C02A20100035L01001R1
Test Date.....	:	2020-10-20 to 2021-06-30
Report Date.....	:	2021-07-30

Tested by:	Checked by:	Approved by:
Jarvis Zhang	Ken	Jessie
Jarvis Zhang/ Test Engineer	Ken Mo/ Project Engineer	Jessie Li/ Technical Manager

Guangdong Meide Testing Technology Co., Ltd. CERTIFICATE

Note 1: The test data was only valid for the test sample(s).This test report is prepared for the customer shown above and for the device described herein. It may not be duplicated or use in part without prior written consent from Guangdong Meide Testing Technology Co., Ltd. This report must not be used by the customer to claim product certification, approval, or endorsement by NVLAP,NIST, or any agency of the Federal Government.
Note 2: This report does not imply product certification, approval, or endorsement by NVLAP, NIST,or any agency of theFederal Government.

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ENERGY STAR® LM-80 Cover Sheet

Administrative Information

Tested subcomponent series:	LED COB
Tested subcomponent model number:	GSCOBWC-300W12X2-SH1308
Report issue date:	2021-07-01
Report revision date(if applicable):	N/A
Testing start date:	2020-10-20
Testing completion date:	2021-06-30

DUT Identification

DUT manufacture's name:	Zhongshan Guangsheng Semiconductor Technology Co., Ltd.
DUT identification,e.g., model number:	GSCOBWC-300W12X2-SH1308
Description of DUT,including if the DUT is an LED package or module:	LED Package

DUT Characteristics

Total input power(W):	12 W
Average current density per LED die(mA/mm^2):	$600mA/mm^2$
Average power density per LED die(W/mm^2):	$0.27W/mm^2$
Representative CRI(Ra) of the tested sample set: (Indicate whether the reported value is the mean or Median value of the sample set,or per unit)	90
Minimum die edge to die edge spacing:	0.25mm

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1.General Information

1.1 Description of LED Light Sources

Sample Size:

50Pcs samples were received on 2020-10-20 ,The samples were numbered from S1 to S25 and S26 to S50.

Manufacture: Zhongshan Guangsheng Semiconductor Technology Co., Ltd.

Part Number: GSCOBWC-300W12X2-SH1308

Part Type: LED COB

Drive Level: DC 300mA

Nominal CCT: 2700K

Power: 12W

CRI: 90

Sampling Method:

LED samples for IESNA LM-80 testing consist of units built from three manufacturing lots with each manufacturing lot built from different wafer lots built on non-consecutive days.These manufacturing lots are picked to represent a wide parametric distribution.
Each Sample is soldered to all of the reliability stress boards for a given set of IESNA LM-80 tests.

Family products covered by this report:

According to ENERGY STAR® Requirements for the Use of LM-80 Data, the following products can be covered by this report base on the information and declaration provided by manufacturer. The information of these models shows that the covered products meet all section 4 requirements of ENERGY STAR® Requirements for the Use of LM-80 Data (September 28, 2017)

This report covers the following models:

Model name	CCT (K)	Number of dies	Current density per die (mA/mm^2)	Current (mA)	Power density (W/mm^2)	Power (W)	Die Spacing (mm)	Driver current of die （mA）
Test Model GSCOBWC-300W12X2-SH1308	2700K/ 6500K	24	600	300	0.27	12W*2	0.25	300
GSCOBWC-300W5X2-SH1308	2700K/ 6500K	10	600	300	0.117	5W*2	0.7	300
GSCOBWC-300W7X2-SH1308	2700K/ 6500K	14	600	300	0.164	7W *2	0.6	300

Disclaimer:
The truthfulness and accuracy of all the technical information above for the covered LED products is ensured by manufacturer of LED light source.Guangdong Meide Testing Technology Co., Ltd. isn't responsible or gives any guarantees for the truthfulness of the technical information.

1.2 Standards Used

- ANSI/IES LM-80-15 IES Approved Method for Luminous Flux and Color Maintenance of LED Packages,Arrays and Modules
- ENERGY STAR® Requirements for the use of LM-80 Data(This standard was not accredited by NVLAP)

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1.3 Test equipment list

Test Equipment	Serial No	Model No	Calibration due date
Integrating Sphere System	MD-E033	0.5m	2022/05/18
Standard Light Source	MD-E034	D062	2022/05/18
High Accuracy Array Spectroradio Meter	MD-E011	HAAS-3000	2021/09/29
Digital Power Meter	MD-E008	PF310	2021/09/29
Precision digital stabilized DC power supply	MD-E009	WY305	2021/09/29
Temperature Tester	MD-E038	UFS-D8036	2022/06/17

Statement of Traceability: Guangdong Meide Testing Technology Co., Ltd.attested that all calibration has been performed using suitable standards traceable to national primary standards and International System of Unit(SI).

1.4 Drive Level

Samples are driven with a constant direct current (DC) during maintenance test, photometric and electrical measurement. The current value was regulated to within ±3% of the specified value of the manufacturer during maintenance test, and was within ±0.5% during photometric and electrical measurement test.

1.5 Ambient Conditions for Maintenance Test

For lumen maintenance test, samples within one data set, were installed on cooling boards in thermal chambers with minimal ambient airflow.The case temperature and ambient temperature was monitoredby thermocouples which one was soldered to the coldest DUTs' case (TMP_{LED}) location, while the other is mounted at a distance of 5 mm above the TMP location.

During life testing, TMP_{LED} of the coldest LEDs were maintained at a temperature that was greater than or equal to 2°C below the corresponding nominal case temperature. Surrounding air was maintained at a temperature that was greater than or equal to 5°C below the corresponding nominal case temperature. Thermocouples were shielded from direct DUT optical radiation and comply with ASTM E230 Table 1 "Special Limits".

Samples were connected to DC power supply in series circuits with a constant current.The forward current was regulated to within ±3% of the specified value of the manufacturer.

The relative humidity within chamber was kept less than 65% during test.

For photometry measurement, the ambient temperature during test was set to 25°C ± 2°C, RH＜65%.

1.6 Photometric Measurement Method

Integrating sphere and spectroradiometer is used to measure luminous flux and chromaticity coordinate u'v'.2π measurement was used and sample was drived by DC power supply. The forward current was regulated to within ±0.5% of the nominal value. The test system was calibrated by halogen reference lamp.The ambient temperature during test was set to 25°C ± 2°C, RH <65%. The temperature measurement point was located in the sphere and the temperature was detected by a temperature probe.

The uncertainty of the light output(luminous flux) measurements is U=2.1%(K=2),at the 95% confidence level.The uncertainty of the correlated color temperature measurements is U=18K(K=2),at the 95% confidence level.The uncertainty of the temperature is U=0.5°C(K=2),at the 95% confidence level.

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1.7 Sample Set

Data Set 1:85°C,300mA	
Part number：	GSCOBWC-300W12X2-SH1308
Number of Units:	25
Case Temperature(T_S):	＞83°C
Ambient Temperature(T_A):	＞80°C
Life Test Drive Current:	300mA
Measurement Current:	300mA

Data Set 2:105°C,300mA	
Part number：	GSCOBWC-300W12X2-SH1308
Number of Units:	25
Case Temperature(T_S):	＞103°C
Ambient Temperature(T_A):	＞100°C
Life Test Drive Current:	300mA
Measurement Current:	300mA

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2. SUMMARY OF TEST RESULT

Data Set:	Sample Size	Failures Observed:	Test Interval	Test Duration	α	β	Reported TM-21 L_{70} Lifetime
1	25	0	1000hrs	6000Hrs	5.408E-06	1.006	>36000hrs
2	25	0	1000hrs	6000Hrs	6.111E-06	1.007	>36000hrs

Average Lumen Maintenance (Percentage of Initial Luminous Flux)

Data Set:	1000hrs	2000hrs	3000hrs	4000hrs	5000hrs	6000hrs
1	99.93%	99.78%	99.03%	98.49%	97.94%	97.41%
2	99.99%	99.48%	98.85%	98.23%	97.62%	97.02%

Average Chromaticity Shift (Δu'v')

Data Set:	1000hrs	2000hrs	3000hrs	4000hrs	5000hrs	6000hrs
1	0.0002	0.0003	0.0005	0.0008	0.0010	0.0013
2	0.0003	0.0005	0.0008	0.0012	0.0015	0.0019

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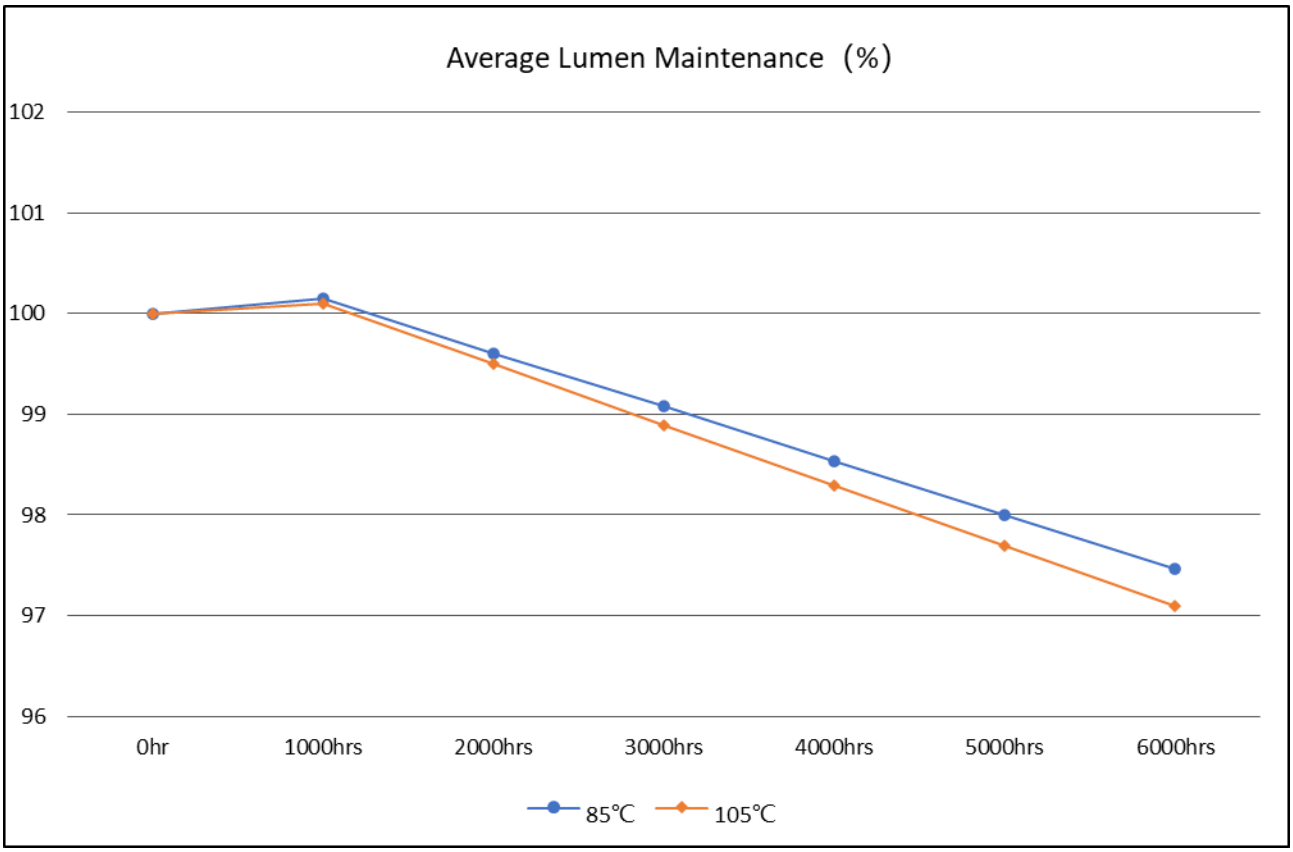

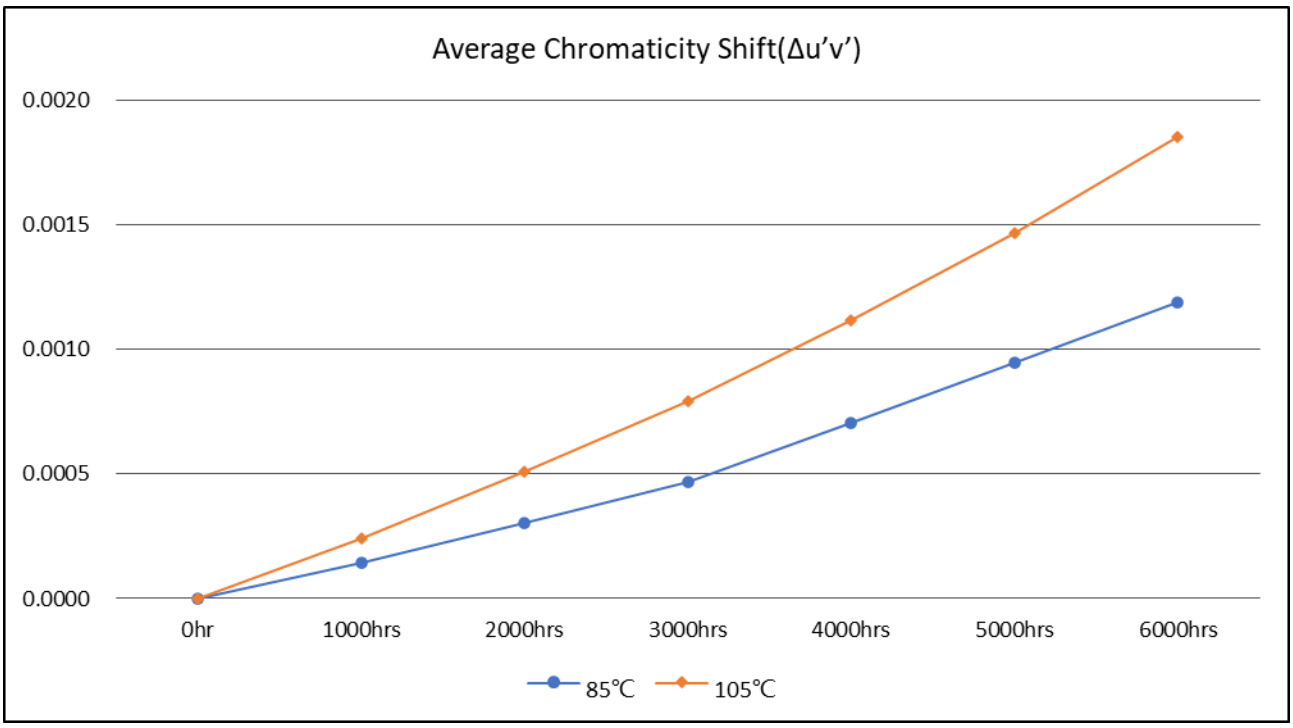

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3.Test Data

3.1 Data Set 1, 85 ℃, 300mA (Lumen Maintenance)

Sample Number	Φ(lm)	Lumen Maintenance (%)					
	0hr(Initial)	1000hrs	2000hrs	3000hrs	4000hrs	5000hrs	6000hrs
S1	979.86	99.91	99.77	99.07	98.58	98.12	97.65
S2	979.09	99.91	99.91	99.04	98.47	97.78	97.39
S3	978.99	99.92	99.76	98.98	98.43	97.87	97.31
S4	977.96	99.91	99.65	99.04	98.47	97.97	97.39
S5	977.88	99.94	99.60	99.03	98.44	97.90	97.37
S6	977.49	99.91	99.87	99.12	98.56	98.00	97.45
S7	977.24	99.93	99.74	98.94	98.45	97.96	97.42
S8	977.43	99.93	99.62	98.96	98.37	97.82	97.24
S9	969.17	99.94	99.85	99.13	98.63	98.07	97.58
S10	968.78	99.93	99.97	99.08	98.54	98.01	97.49
S11	968.88	99.91	99.71	98.94	98.36	97.84	97.25
S12	968.26	99.91	99.75	98.94	98.42	97.89	97.39
S13	983.52	99.91	99.92	99.09	98.52	97.95	97.40
S14	983.90	100.00	99.32	98.94	98.36	97.79	97.23
S15	983.61	99.90	99.66	98.96	98.43	97.88	97.30
S16	978.81	99.91	99.93	99.14	98.59	98.02	97.53
S17	978.78	99.91	99.79	99.08	98.55	97.99	97.41
S18	978.97	99.91	99.88	98.98	98.44	97.88	97.29
S19	978.40	100.02	99.94	99.13	98.59	98.02	97.45
S20	978.16	99.91	99.72	99.11	98.52	98.02	97.49
S21	973.66	100.00	99.70	99.01	98.46	97.88	97.32
S22	973.48	99.94	99.84	99.01	98.52	97.97	97.48
S23	973.56	99.94	99.93	99.11	98.57	98.06	97.55
S24	973.28	99.95	99.78	99.13	98.59	98.02	97.50
S25	973.40	99.93	99.97	98.91	98.38	97.82	97.32
Ave.	976.50	99.93	99.78	99.03	98.49	97.94	97.41
Med.	977.88	99.92	99.78	99.04	98.47	97.96	97.40
St dev	4.53	0.0317	0.1478	0.0751	0.0813	0.0934	0.1103
Min.	968.26	99.90	99.32	98.91	98.36	97.78	97.23
Max.	983.90	100.02	99.97	99.14	98.63	98.12	97.65

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3.2 Data Set 1, 85°C, 300mA (Forward Voltage)

Sample Number	Forward Voltage(V)						
	0hr(Initial)	1000hrs	2000hrs	3000hrs	4000hrs	5000hrs	6000hrs
S1	35.16	35.16	35.14	35.21	35.15	35.13	35.19
S2	35.16	35.13	35.13	35.18	35.16	35.22	35.18
S3	35.16	35.19	35.23	35.27	35.21	35.25	35.21
S4	35.15	35.14	35.19	35.25	35.22	35.24	35.22
S5	35.15	35.18	35.17	35.24	35.25	35.26	35.20
S6	35.15	35.21	35.25	35.21	35.20	35.25	35.27
S7	35.15	35.13	35.07	35.08	35.02	34.97	35.00
S8	35.14	35.17	35.19	35.21	35.14	35.16	35.22
S9	35.14	35.17	35.11	35.06	35.00	35.02	35.00
S10	35.14	35.12	35.05	35.10	35.15	35.16	35.13
S11	35.14	35.14	35.12	35.18	35.25	35.19	35.12
S12	35.14	35.13	35.15	35.17	35.20	35.23	35.28
S13	35.13	35.17	35.13	35.10	35.12	35.14	35.14
S14	35.13	35.08	35.01	34.95	34.89	34.95	34.89
S15	35.13	35.12	35.09	35.15	35.09	35.07	35.07
S16	35.13	35.08	35.10	35.09	35.14	35.09	35.14
S17	35.13	35.19	35.23	35.29	35.24	35.28	35.35
S18	35.13	35.18	35.11	35.09	35.14	35.10	35.15
S19	35.12	35.19	35.18	35.18	35.14	35.21	35.27
S20	35.12	35.18	35.24	35.19	35.26	35.24	35.29
S21	35.12	35.16	35.18	35.20	35.21	35.19	35.14
S22	35.12	35.08	35.08	35.06	35.08	35.03	35.01
S23	35.12	35.13	35.07	35.12	35.13	35.10	35.13
S24	35.12	35.10	35.07	35.06	35.13	35.17	35.18
S25	35.12	35.06	34.99	35.04	35.08	35.12	35.10
Ave.	35.14	35.14	35.13	35.15	35.14	35.15	35.15
Med.	35.13	35.14	35.13	35.17	35.14	35.16	35.15
St dev	0.01	0.04	0.07	0.08	0.09	0.09	0.11
Min.	35.12	35.06	34.99	34.95	34.89	34.95	34.89
Max.	35.16	35.21	35.25	35.29	35.26	35.28	35.35

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3.3 Data Set 1, 85°C, 300mA (Chromaticity Shift)

Sample Number	u'	v'	CCT(K)	Chromaticity Shift (Δu'v')					
	0hr(Initial)			1000hrs	2000hrs	3000hrs	4000hrs	5000hrs	6000hrs
S1	0.2640	0.5342	2645	0.0002	0.0003	0.0004	0.0006	0.0009	0.0013
S2	0.2639	0.5347	2644	0.0001	0.0003	0.0005	0.0008	0.0011	0.0014
S3	0.2638	0.5348	2646	0.0001	0.0004	0.0006	0.0008	0.0011	0.0014
S4	0.2663	0.5321	2606	0.0002	0.0004	0.0005	0.0009	0.0010	0.0011
S5	0.2630	0.5349	2663	0.0002	0.0004	0.0006	0.0007	0.0009	0.0011
S6	0.2666	0.5319	2602	0.0001	0.0003	0.0004	0.0006	0.0009	0.0012
S7	0.2659	0.5325	2614	0.0001	0.0003	0.0005	0.0008	0.0011	0.0015
S8	0.2633	0.5351	2655	0.0001	0.0003	0.0005	0.0008	0.0010	0.0011
S9	0.2632	0.5352	2657	0.0002	0.0004	0.0006	0.0008	0.0010	0.0012
S10	0.2630	0.5349	2661	0.0002	0.0004	0.0006	0.0008	0.0011	0.0015
S11	0.2665	0.5319	2604	0.0001	0.0002	0.0004	0.0006	0.0008	0.0012
S12	0.2640	0.5342	2645	0.0001	0.0003	0.0005	0.0006	0.0008	0.0011
S13	0.2667	0.5311	2603	0.0001	0.0004	0.0005	0.0006	0.0007	0.0011
S14	0.2639	0.5347	2644	0.0001	0.0003	0.0005	0.0008	0.0011	0.0014
S15	0.2642	0.5348	2639	0.0002	0.0004	0.0006	0.0009	0.0012	0.0016
S16	0.2633	0.5351	2655	0.0001	0.0003	0.0005	0.0009	0.0010	0.0014
S17	0.2618	0.5347	2685	0.0001	0.0003	0.0005	0.0008	0.0011	0.0014
S18	0.2604	0.5348	2713	0.0001	0.0003	0.0004	0.0007	0.0009	0.0011
S19	0.2604	0.5348	2713	0.0002	0.0004	0.0007	0.0009	0.0011	0.0012
S20	0.2601	0.5348	2721	0.0001	0.0003	0.0006	0.0009	0.0011	0.0014
S21	0.2633	0.5351	2655	0.0002	0.0004	0.0005	0.0007	0.0009	0.0012
S22	0.2601	0.5348	2721	0.0002	0.0004	0.0008	0.0010	0.0011	0.0014
S23	0.2600	0.5349	2723	0.0001	0.0002	0.0004	0.0005	0.0009	0.0011
S24	0.2605	0.5347	2716	0.0001	0.0003	0.0004	0.0005	0.0006	0.0009
S25	0.2604	0.5348	2718	0.0001	0.0003	0.0005	0.0008	0.0011	0.0014
Ave.	0.2631	0.5342	2662	0.0002	0.0003	0.0005	0.0008	0.0010	0.0013
Med.	0.2633	0.5348	2655	0.0001	0.0003	0.0005	0.0008	0.0010	0.0012
St dev	0.0022	0.0012	41	0.0000	0.0001	0.0001	0.0001	0.0001	0.0002
Min.	0.2600	0.5311	2602	0.0001	0.0002	0.0004	0.0005	0.0006	0.0009
Max.	0.2667	0.5352	2723	0.0002	0.0004	0.0008	0.0010	0.0012	0.0016

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3.4 Data Set 2, 105 ℃, 300mA (Lumen Maintenance)

Sample Number	Φ(lm)	Lumen Maintenance (%)					
	0hr(Initial)	1000hrs	2000hrs	3000hrs	4000hrs	5000hrs	6000hrs
S26	896.38	99.97	99.51	98.84	98.18	97.56	96.99
S27	896.14	99.94	99.45	98.84	98.22	97.58	97.00
S28	896.17	99.96	99.50	98.83	98.18	97.60	97.01
S29	895.82	99.99	99.45	98.80	98.19	97.61	97.03
S30	896.01	99.97	99.45	98.83	98.25	97.66	97.05
S31	903.26	100.12	99.48	98.87	98.29	97.66	97.05
S32	903.78	100.03	99.48	98.88	98.29	97.68	97.08
S33	903.44	99.94	99.40	98.75	98.09	97.45	96.90
S34	903.24	100.14	99.52	98.89	98.23	97.61	96.98
S35	902.73	100.05	99.38	98.72	98.08	97.49	96.94
S36	918.31	99.94	99.51	98.84	98.27	97.62	97.01
S37	917.84	100.18	99.54	98.91	98.29	97.66	97.07
S38	917.79	99.98	99.48	98.85	98.26	97.62	96.97
S39	917.87	99.96	99.56	98.94	98.29	97.70	97.04
S40	917.65	99.96	99.40	98.80	98.16	97.54	96.93
S41	912.63	99.98	99.47	98.85	98.25	97.69	97.11
S42	912.19	99.88	99.52	98.92	98.28	97.69	97.10
S43	911.84	100.06	99.52	98.89	98.27	97.66	97.02
S44	912.64	100.05	99.48	98.83	98.23	97.62	96.98
S45	911.82	99.87	99.46	98.81	98.15	97.55	96.96
S46	904.43	100.06	99.47	98.90	98.34	97.75	97.15
S47	904.86	99.90	99.52	98.85	98.26	97.61	97.05
S48	904.68	100.03	99.36	98.79	98.19	97.61	96.99
S49	904.41	99.97	99.44	98.83	98.22	97.56	96.91
S50	904.35	99.89	99.53	98.90	98.28	97.70	97.08
Ave.	906.81	99.99	99.48	98.85	98.23	97.62	97.02
Med.	904.43	99.97	99.48	98.84	98.25	97.62	97.01
St dev	7.70	0.0795	0.0511	0.0520	0.0643	0.0696	0.0634
Min.	895.82	99.87	99.36	98.72	98.08	97.45	96.90
Max.	918.31	100.18	99.56	98.94	98.34	97.75	97.15

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3.5 Data Set 2, 105 ℃, 300mA (Forward Voltage)

Sample Number	Forward Voltage(V)						
	0hr(Initial)	1000hrs	2000hrs	3000hrs	4000hrs	5000hrs	6000hrs
S26	35.07	35.05	35.07	35.02	34.96	34.97	34.97
S27	35.07	35.11	35.12	35.16	35.14	35.08	35.02
S28	35.06	35.00	34.97	35.00	34.93	34.86	34.86
S29	35.06	35.09	35.05	35.01	34.94	34.91	34.97
S30	35.06	35.07	35.00	34.94	34.89	34.87	34.84
S31	35.06	35.12	35.08	35.05	35.09	35.12	35.17
S32	35.06	35.07	35.00	34.95	34.98	34.95	34.93
S33	35.06	35.03	35.07	35.14	35.15	35.09	35.13
S34	35.06	35.06	35.02	34.98	34.92	34.91	34.84
S35	35.06	35.07	35.05	35.07	35.08	35.05	35.10
S36	35.06	35.01	34.98	34.95	35.00	34.98	35.00
S37	35.05	35.11	35.14	35.08	35.07	35.01	35.02
S38	35.05	35.04	35.09	35.13	35.14	35.09	35.09
S39	35.05	35.03	35.05	35.03	35.02	34.97	35.01
S40	35.05	35.04	35.09	35.13	35.15	35.20	35.19
S41	35.05	35.01	34.99	34.97	34.99	35.04	34.98
S42	35.05	35.11	35.14	35.20	35.17	35.10	35.16
S43	35.05	35.06	35.03	34.97	35.01	34.96	34.99
S44	35.05	35.04	35.01	34.97	34.90	34.92	34.97
S45	35.04	34.98	35.00	35.05	35.00	35.02	34.96
S46	35.04	35.08	35.15	35.18	35.19	35.25	35.23
S47	35.04	35.03	35.06	35.09	35.15	35.17	35.18
S48	35.04	35.03	34.98	35.04	34.97	34.91	34.97
S49	35.04	35.00	35.03	34.99	34.96	34.96	35.03
S50	35.04	35.01	34.97	35.00	35.03	35.01	35.05
Ave.	35.05	35.05	35.05	35.04	35.03	35.02	35.03
Med.	35.05	35.04	35.05	35.03	35.01	35.01	35.01
St dev	0.0094	0.0387	0.0541	0.0771	0.0929	0.1028	0.1081
Min.	35.04	34.98	34.97	34.94	34.89	34.86	34.84
Max.	35.07	35.12	35.15	35.20	35.19	35.25	35.23

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3.6 Data Set 2, 105°C, 300mA (Chromaticity Shift)

Sample Number	u'	v'	CCT(K)	Chromaticity Shift (Δu'v')					
	0hr(Initial)			1000hrs	2000hrs	3000hrs	4000hrs	5000hrs	6000hrs
S26	0.2659	0.5321	2614	0.0003	0.0006	0.0010	0.0013	0.0017	0.0022
S27	0.2661	0.5319	2611	0.0003	0.0005	0.0009	0.0012	0.0015	0.0017
S28	0.2630	0.5349	2663	0.0002	0.0005	0.0008	0.0010	0.0013	0.0018
S29	0.2663	0.5317	2608	0.0002	0.0004	0.0008	0.0011	0.0015	0.0018
S30	0.2656	0.5322	2620	0.0002	0.0005	0.0009	0.0013	0.0017	0.0020
S31	0.2639	0.5347	2644	0.0002	0.0004	0.0007	0.0010	0.0013	0.0015
S32	0.2642	0.5348	2639	0.0002	0.0004	0.0008	0.0012	0.0015	0.0021
S33	0.2602	0.5347	2719	0.0002	0.0005	0.0008	0.0012	0.0015	0.0019
S34	0.2662	0.5317	2609	0.0003	0.0005	0.0009	0.0012	0.0017	0.0019
S35	0.2665	0.5309	2608	0.0002	0.0004	0.0008	0.0011	0.0014	0.0018
S36	0.2639	0.5347	2644	0.0002	0.0004	0.0007	0.0011	0.0015	0.0019
S37	0.2640	0.5342	2645	0.0003	0.0006	0.0009	0.0013	0.0015	0.0018
S38	0.2630	0.5349	2661	0.0003	0.0006	0.0009	0.0014	0.0018	0.0023
S39	0.2602	0.5347	2719	0.0002	0.0005	0.0008	0.0011	0.0015	0.0018
S40	0.2630	0.5349	2661	0.0003	0.0006	0.0009	0.0014	0.0016	0.0019
S41	0.2602	0.5347	2719	0.0002	0.0005	0.0008	0.0013	0.0016	0.0019
S42	0.2600	0.5349	2723	0.0003	0.0005	0.0008	0.0011	0.0013	0.0017
S43	0.2599	0.5351	2727	0.0003	0.0005	0.0009	0.0011	0.0014	0.0019
S44	0.2601	0.5348	2721	0.0002	0.0004	0.0008	0.0011	0.0014	0.0018
S45	0.2658	0.5322	2616	0.0003	0.0005	0.0009	0.0012	0.0015	0.0019
S46	0.2630	0.5349	2663	0.0003	0.0005	0.0008	0.0011	0.0014	0.0017
S47	0.2601	0.5348	2721	0.0002	0.0005	0.0009	0.0011	0.0014	0.0018
S48	0.2657	0.5323	2618	0.0003	0.0005	0.0009	0.0012	0.0016	0.0018
S49	0.2659	0.5321	2614	0.0002	0.0004	0.0008	0.0012	0.0016	0.0020
S50	0.2600	0.5349	2723	0.0002	0.0004	0.0008	0.0011	0.0014	0.0018
Ave.	0.2633	0.5337	2660	0.0003	0.0005	0.0008	0.0012	0.0015	0.0019
Med.	0.2639	0.5347	2645	0.0002	0.0005	0.0008	0.0012	0.0015	0.0018
St dev	0.0025	0.0014	46.2997	0.0000	0.0001	0.0001	0.0001	0.0001	0.0002
Min.	0.2599	0.5309	2608	0.0002	0.0004	0.0007	0.0010	0.0013	0.0015
Max.	0.2665	0.5351	2727	0.0003	0.0006	0.0010	0.0014	0.0018	0.0023

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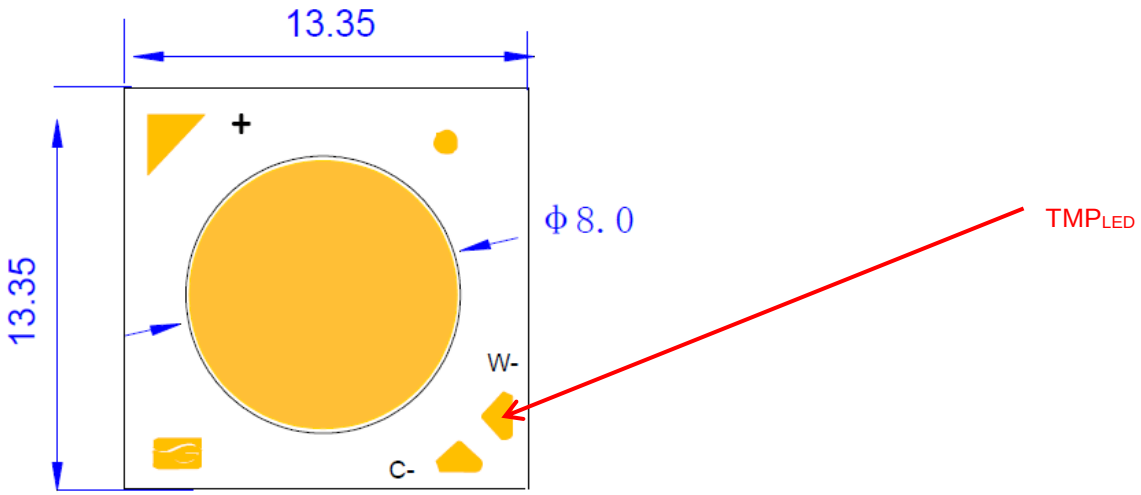
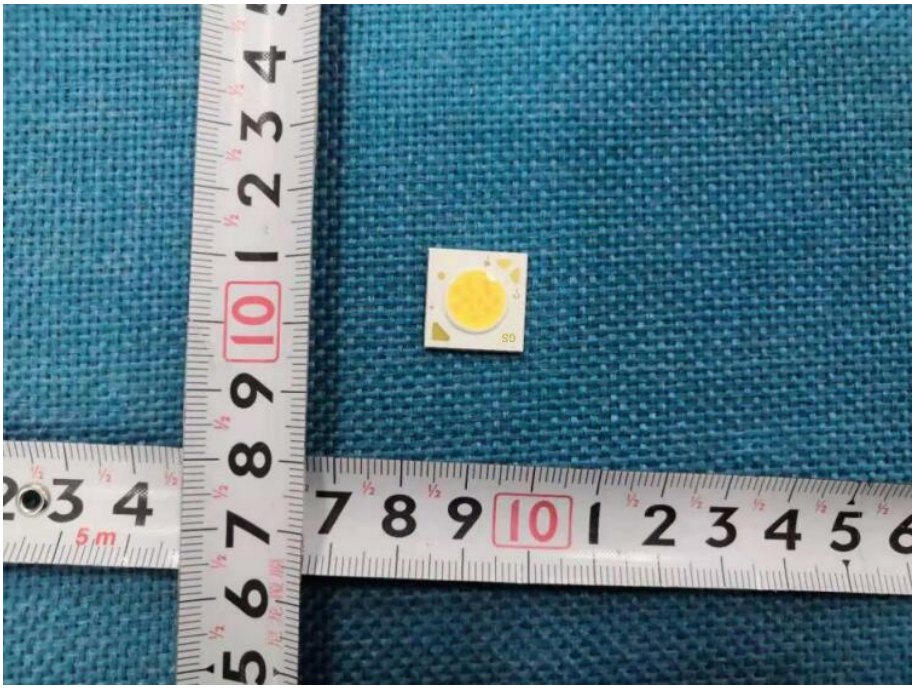
4 . EUT PHOTO

4.1 Mechanical Dimensions



All dimensions are in millimeter

4.2 EUT Photo



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

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Report Revision

Original report number C02A20100035L01001 dated at 2021/06/30 was recalled and declared as invalid by Guangdong Meide Testing Technology Co.,Ltd. Report number C02A20100035L01001R1 was issued on to replace report number C02A20100035L01001.

Report Number	Report Date	Contents
C02A20100035L01001	2021-06-30	Original report
C02A20100035L01001R1	2021-07-30	Update Current density per die and Die Spacing in page 2, 4

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