# Test Report

| | | |
|---|---|---|
| **Client** | : | Guangdong Ainte Optoelectronics Co., Ltd |
| **Address** | : | 8th Floor, Building B, No. 13 Nanfeng 2nd Street, Tongyi Road, Guzhen Town, Zhongshan City |

**Description of the submitted sample(s):**

| | | |
|---|---|---|
| Sample Name | : | LED Chip |
| Model/Type | : | See the model list |
| Trademark | : | N/A |
| Ratings | : | Vf: 3.0-3.2Vdc; If:60mA |
| Test Item | : | LM-80-21 |
| State of Sample(s) | : | Normal |
| Sample Quantity | : | 75 PCS |
| Manufacturer | : | Guangdong Ainte Optoelectronics Co., Ltd |
| Address | : | 8th Floor, Building B, No. 13 Nanfeng 2nd Street, Tongyi Road, Guzhen Town, Zhongshan City |
| Sample Received Date | : | 2023-11-15 |
| Sample tested Date | : | 2023-11-15 |
| Test Standard | : | LM-80-21 |
| Test Laboratory | : | Shenzhen AOCE Electronic Technology Service Co., Ltd |
| Testing location | : | Room 202, 2nd Floor, No.12th Building of Xinhe Tongfuyu Industrial Park, Fuhai Street, Baoan District, Shenzhen, Guangdong, China |
| Remark | : | The tested sample(s) and the sample information are provided by the client. |

Compiled by: Bill Hu

Approved by: Robin Liu

Robin Liu
Lab Supervisor

Date : 2025-08-26

**General Information**

**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.

**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)

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

# 1 Test Condition

### 1.1 Air Temperature

The ambient temperature in which measurements are being taken shall be maintained at 25°C±1°C, measured at a point not more than 1 m from the SSL product and at the same height as the SSL product. The temperature sensor shall be shielded from direct optical radiation from the SSL product and optical radiation from any other source. If measurements are performed at other than this recommended temperature, this is a non-standard condition and shall be noted in the test report.

### 1.2 Thermal Conditions for Mounting SSL Products

The method of mounting can be the primary path for heat flow away from the device and can affect measurement results significantly. The SSL product under test shall be mounted to the measuring instrument so that heat conduction through supporting objects causes negligible cooling effects. If the SSL product under test is provided with a support structure that is designated to be used as a component of the luminaire thermal management system, the product shall be tested with the support structure attached. Any such support structure included in the measurement shall be reported.

### 1.3 Air Movement

The incidence of air movements on the surface of a SSL product under test may substantially after electrical and photometric values. Air flow around the SSL product being tested should be such that normal convective air flow induced by device under test is not affected.

### 1.4 Waveshape of AC Power Supply

The AC power supply, while operating the SSL product, shall have a sinusoidal voltage waveshapeat the prescribed frequency typically 50/60 Hz or 50 Hz) such that the RMS summation of the harmonic components does not exceed 3 percent of the fundamental during operation of the test item.

### 1.5 Voltage Regulation

The voltage of an AC power supply (RMS voltage) or DC power supply (instantaneous voltage) applied to the device under test shall be regulated to within ±0.2 percent under load.

### 1.6 Seasoning

For the purpose of rating new SSL products, SSL products shall be tested with no seasoning.

### 1.7 Stabilization

Before measurements are taken, the SSL product under test shall be operated long enough to reach stabilization and temperature equilibrium. The time required for stabilization depends on the type of SSL products under test. The stabilization time typically ranges from 30 min to 2 or more hours for large SSL products.

### 1.8 Operating Orientation

The SSL product under test shall be evaluated in the operating orientation recommended by the manufacturer for an intended use of the SSL product. Stabilization and photometric measurements of SSL products shall be done in such operating orientation.

## 2 Test Method

### 2.1 Integrating Sphere Measurement

The integrating sphere system includes AC power source, digital power meter, DC power supply, spectrophotometer, and integrating sphere. The system is calibrated by standard lamp before measurement weekly. The standard lamp has been calibrated regularly and traced to the National Primary Standard.

The 4π geometry was used to measure total luminous, luminous efficacy, chromaticity coordinates, correlated color temperature, and color rendering index, the spectral radiant flux measurements taken at 1 nm intervals over the range of 380 to 780 nm. The product was operated in its intended orientation and was recorded in the report.

### 2.2 Goniophotometer Measurement

The goniophotometer system is calibrated by standard lamp before measurement weekly. The standard lamp has been calibrated regularly and traced to National Primary Standards.

Type C goniophotometer was used for measuring total luminous flux, luminous efficacy, luminous intensity distribution, and color angular uniformity, which were calculated from the software taken at 1° vertical intervals and 22.5° horizontal intervals. The product was operated in its intended orientation and was recorded in the report.

### 2.3 Electrical Measurement

According to ANSI C82.77-2002, the measurement was made using a digital power meter and power supply, the SSL product under test was operated at rated voltage and stabilized enough before measurement. The total harmonic distortion of current and power factor can be calculated from the digital power meter. The digital power meter was calibrated regularly and traced to National Primary Standards.

**2.4This report covers the following models:**

| Model list | | | |
|---|---|---|---|
| **Model name** | **CCT** | **Rating** | **Power** |
| 2835 3V0.2W | 2500K | Vf: 2.8-3.2Vdc; If:60mA | 0.2W |
| **2835 3V0.2W** | **2700K** | **Vf: 2.8-3.2Vdc; If:60mA** | **0.2W** |
| 2835 3V0.2W | 3000K | Vf: 2.8-3.2Vdc; If:60mA | 0.2W |
| 2835 3V0.2W | 3500K | Vf: 2.8-3.2Vdc; If:60mA | 0.2W |
| **2835 3V0.2W** | **4000K** | **Vf: 2.8-3.2Vdc; If:60mA** | **0.2W** |
| 2835 3V0.2W | 5000K | Vf: 2.8-3.2Vdc; If:60mA | 0.2W |
| 2835 3V0.2W | 6000K | Vf: 2.8-3.2Vdc; If:60mA | 0.2W |
| **2835 3V0.2W** | **6500K** | **Vf: 2.8-3.2Vdc; If:60mA** | **0.2W** |
| 2835 3V0.2W | 7000K | Vf: 2.8-3.2Vdc; If:60mA | 0.2W |
| 2835 3V0.2W | 8000K | Vf: 2.8-3.2Vdc; If:60mA | 0.2W |
| 2835 3V0.2W | 10000K | Vf: 2.8-3.2Vdc; If:60mA | 0.2W |

# 3 Test Result

## 3.1 Sample Set

| **Data Set 1:55°C,60mA** | |
|---|---|
| Model: | 2835 3V0.2W-2700K/4000K/6500K |
| Number of Units: | 25 |
| Case Temperature ($T_S$): | ＞53°C |
| Ambient Temperature ($T_A$): | ＞50°C |
| Life Test Drive Current: | 60mA |
| Measurement Current: | 60mA |

| **Data Set 2:85°C,60mA** | |
|---|---|
| Model: | 2835 3V0.2W-2700K/4000K/6500K |
| Number of Units: | 25 |
| Case Temperature ($T_S$): | ＞83°C |
| Ambient Temperature ($T_A$): | ＞50°C |
| Life Test Drive Current: | 60mA |
| Measurement Current: | 60mA |

| **Data Set 3:105°C,60mA** | |
|---|---|
| Model: | 2835 3V0.2W-2700K/4000K/6500K |
| Number of Units: | 25 |
| Case Temperature ($T_S$): | ＞103°C |
| Ambient Temperature ($T_A$): | ＞100°C |
| Life Test Drive Current: | 60mA |
| Measurement Current: | 60mA |

**Average Lumen Maintenance (Percentage of Initial Luminous Flux)**

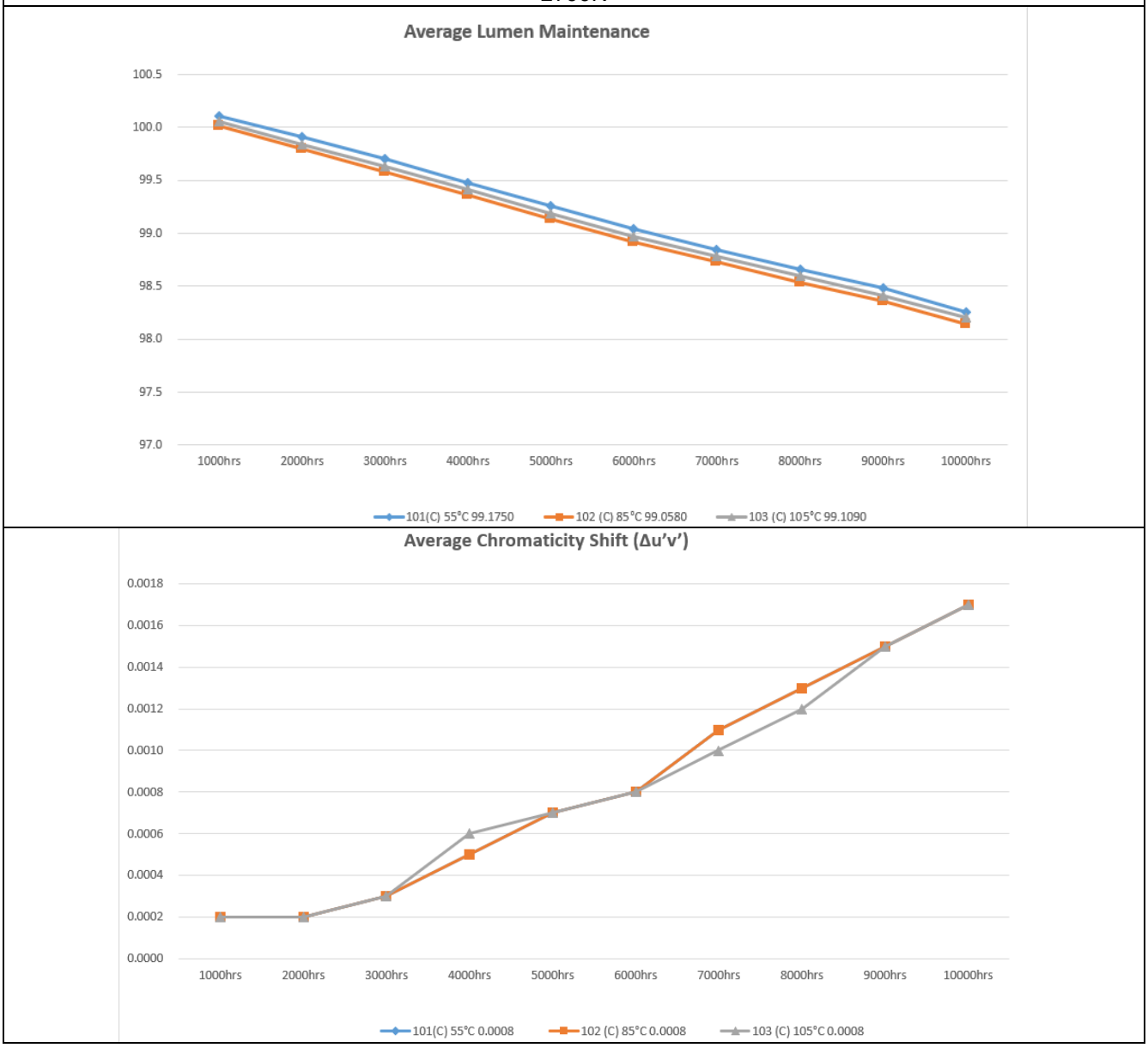
| Data Set: | 1000hrs | 2000hrs | 3000hrs | 4000hrs | 5000hrs | 6000hrs | 7000hrs | 8000hrs | 9000hrs | 10000hrs |
|---|---|---|---|---|---|---|---|---|---|---|
| **2700K** | | | | | | | | | | |
| 1 | 100.11 | 99.91 | 99.70 | 99.48 | 99.26 | 99.04 | 98.85 | 98.66 | 98.48 | 98.26 |
| 2 | 100.01 | 99.80 | 99.58 | 99.36 | 99.14 | 98.92 | 98.73 | 98.54 | 98.36 | 98.14 |
| 3 | 100.06 | 99.84 | 99.63 | 99.41 | 99.19 | 98.97 | 98.78 | 98.60 | 98.41 | 98.20 |
| **3000K** | | | | | | | | | | |
| 1 | 99.98 | 99.78 | 99.57 | 99.35 | 99.13 | 98.91 | 98.72 | 98.53 | 98.35 | 98.13 |
| 2 | 100.03 | 99.82 | 99.60 | 99.38 | 99.16 | 98.94 | 98.75 | 98.56 | 98.38 | 98.16 |
| 3 | 99.97 | 99.75 | 99.54 | 99.32 | 99.10 | 98.88 | 98.69 | 98.51 | 98.32 | 98.11 |
| **6500K** | | | | | | | | | | |
| 1 | 100.56 | 100.36 | 100.15 | 99.93 | 99.71 | 99.49 | 99.30 | 99.11 | 98.93 | 98.71 |
| 2 | 100.08 | 99.87 | 99.65 | 99.43 | 99.21 | 98.99 | 98.80 | 98.61 | 98.43 | 98.21 |
| 3 | 100.00 | 99.78 | 99.57 | 99.35 | 99.13 | 98.92 | 98.73 | 98.55 | 98.35 | 98.14 |

**Average Chromaticity Shift (Δu'v')**

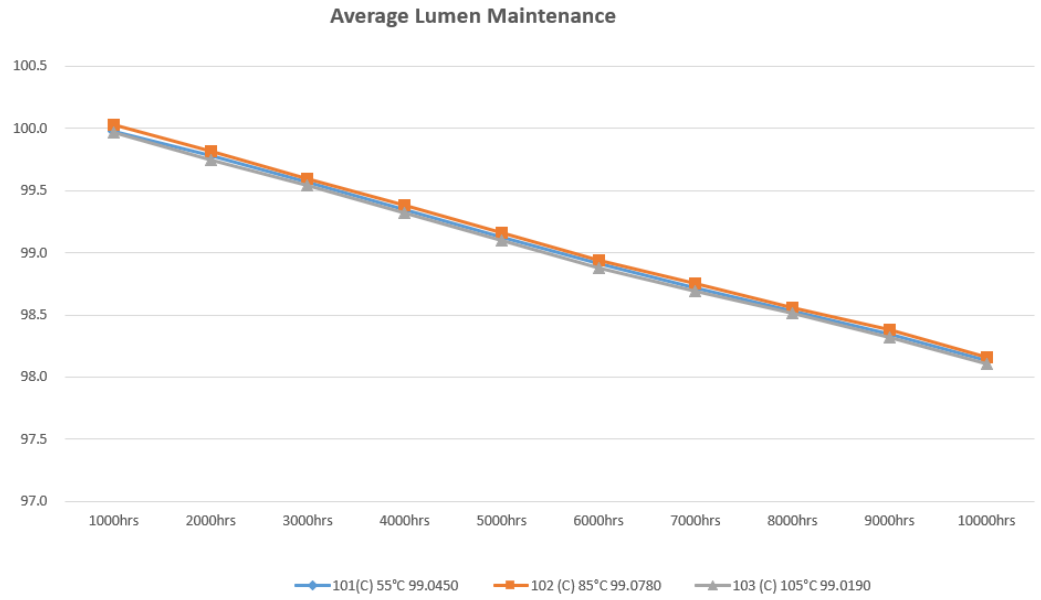
| Data Set: | 1000hrs | 2000hrs | 3000hrs | 4000hrs | 5000hrs | 6000hrs | 7000hrs | 8000hrs | 9000hrs | 10000hrs |
|---|---|---|---|---|---|---|---|---|---|---|
| **2700K** | | | | | | | | | | |
| 1 | 0.0002 | 0.0002 | 0.0003 | 0.0005 | 0.0007 | 0.0008 | 0.0011 | 0.0013 | 0.0015 | 0.0017 |
| 2 | 0.0002 | 0.0002 | 0.0003 | 0.0005 | 0.0007 | 0.0008 | 0.0011 | 0.0013 | 0.0015 | 0.0017 |
| 3 | 0.0002 | 0.0002 | 0.0003 | 0.0006 | 0.0007 | 0.0008 | 0.0010 | 0.0012 | 0.0015 | 0.0017 |
| **3000K** | | | | | | | | | | |
| 1 | 0.0001 | 0.0001 | 0.0002 | 0.0002 | 0.0004 | 0.0005 | 0.0008 | 0.0010 | 0.0012 | 0.0014 |
| 2 | 0.0002 | 0.0001 | 0.0003 | 0.0003 | 0.0005 | 0.0006 | 0.0008 | 0.0010 | 0.0013 | 0.0014 |
| 3 | 0.0003 | 0.0002 | 0.0004 | 0.0006 | 0.0008 | 0.0009 | 0.0011 | 0.0013 | 0.0016 | 0.0017 |
| **6500K** | | | | | | | | | | |

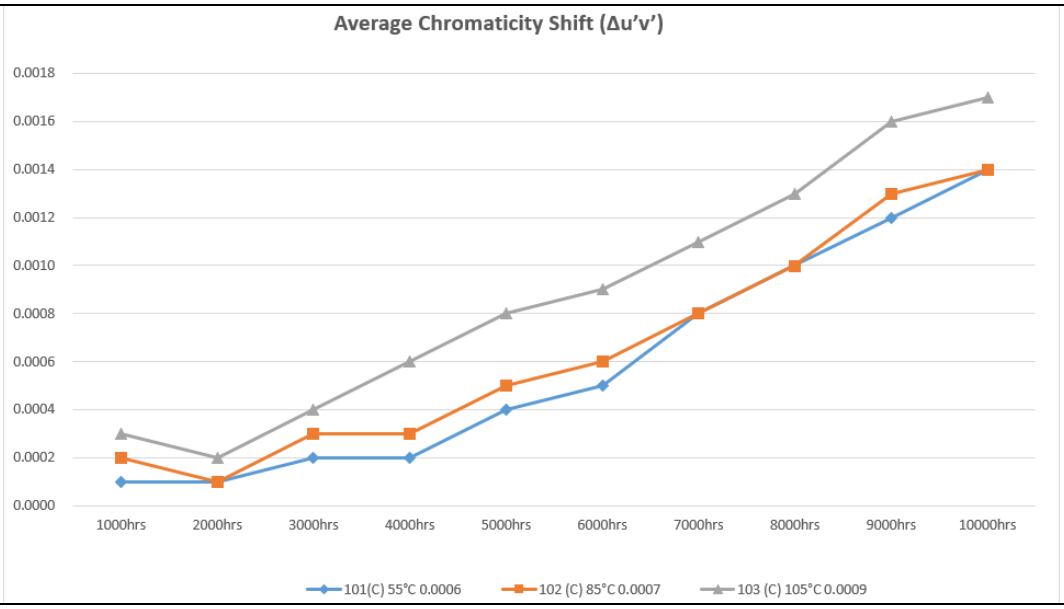
| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0.0002 | 0.0002 | 0.0003 | 0.0003 | 0.0005 | 0.0006 | 0.0009 | 0.0011 | 0.0013 | 0.0015 |
| 2 | 0.0002 | 0.0001 | 0.0003 | 0.0003 | 0.0005 | 0.0005 | 0.0008 | 0.0010 | 0.0012 | 0.0014 |
| 3 | 0.0002 | 0.0002 | 0.0003 | 0.0006 | 0.0007 | 0.0007 | 0.0010 | 0.0012 | 0.0014 | 0.0016 |

2700K

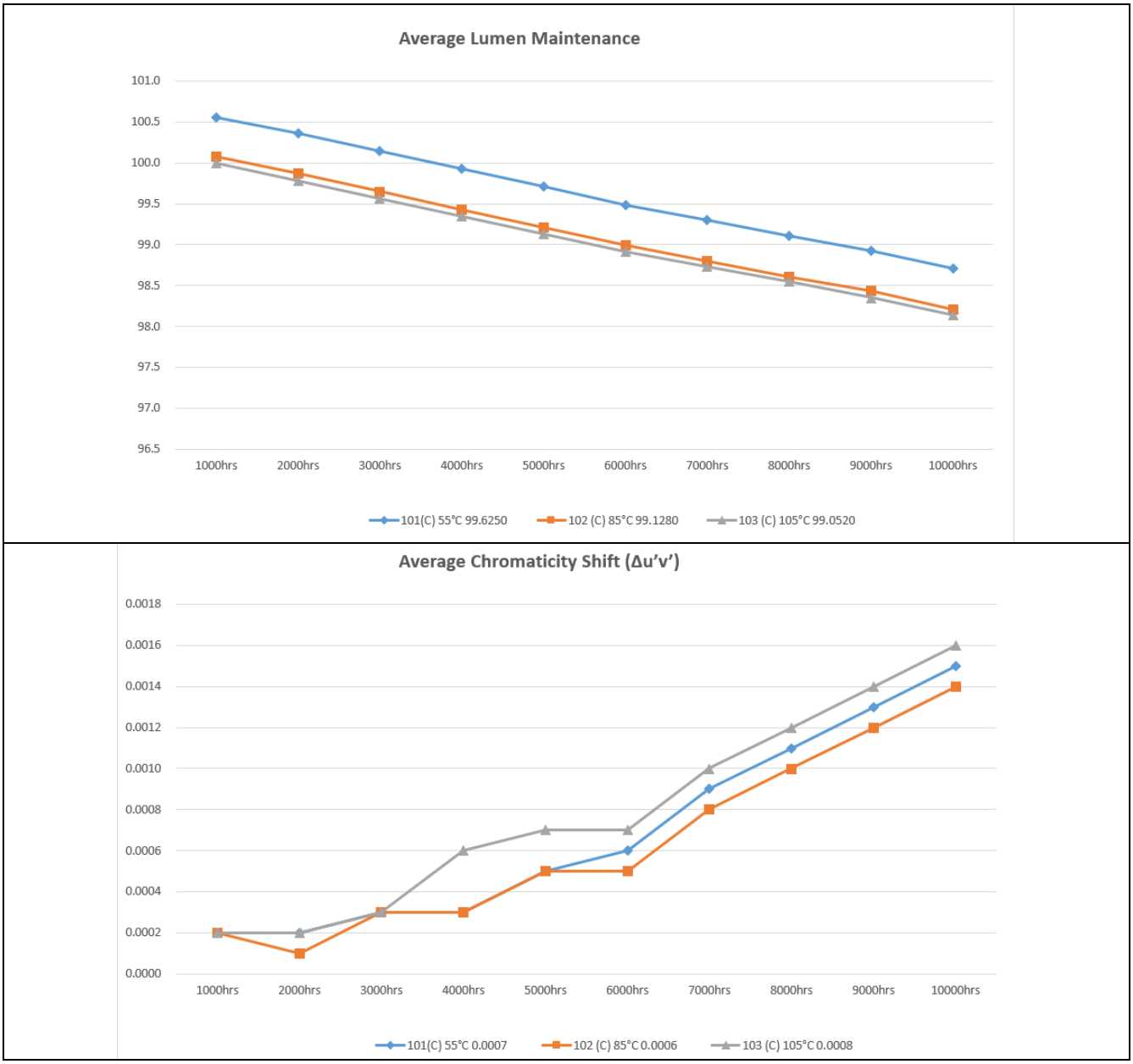

Average Lumen Maintenance
100.5
100.0
99.5
99.0
98.5
98.0
97.5
97.0
1000hrs
2000hrs
3000hrs
4000hrs
5000hrs
6000hrs
7000hrs
8000hrs
9000hrs
10000hrs
101(C) 55°C 99.1750
102 (C) 85°C 99.0580
103 (C) 105°C 99.1090
Average Chromaticity Shift (Δu'v')
0.0018
0.0016
0.0014
0.0012
0.0010
0.0008
0.0006
0.0004
0.0002
0.0000
1000hrs
2000hrs
3000hrs
4000hrs
5000hrs
6000hrs
7000hrs
8000hrs
9000hrs
10000hrs
101(C) 55°C 0.0008
102 (C) 85°C 0.0008
103 (C) 105°C 0.0008

3000K


Average Lumen Maintenance
100.5
100.0
99.5
99.0
98.5
98.0
97.5
97.0
1000hrs
2000hrs
3000hrs
4000hrs
5000hrs
6000hrs
7000hrs
8000hrs
9000hrs
10000hrs
101(C) 55°C 99.0450
102 (C) 85°C 99.0780
103 (C) 105°C 99.0190


Average Chromaticity Shift (Δu'v')
0.0018
0.0016
0.0014
0.0012
0.0010
0.0008
0.0006
0.0004
0.0002
0.0000
1000hrs
2000hrs
3000hrs
4000hrs
5000hrs
6000hrs
7000hrs
8000hrs
9000hrs
10000hrs
101(C) 55°C 0.0006
102 (C) 85°C 0.0007
103 (C) 105°C 0.0009

6500K


Average Lumen Maintenance
101.0
100.5
100.0
99.5
99.0
98.5
98.0
97.5
97.0
96.5
1000hrs
2000hrs
3000hrs
4000hrs
5000hrs
6000hrs
7000hrs
8000hrs
9000hrs
10000hrs
101(C) 55°C 99.6250
102 (C) 85°C 99.1280
103 (C) 105°C 99.0520
Average Chromaticity Shift (Δu'v')
0.0018
0.0016
0.0014
0.0012
0.0010
0.0008
0.0006
0.0004
0.0002
0.0000
1000hrs
2000hrs
3000hrs
4000hrs
5000hrs
6000hrs
7000hrs
8000hrs
9000hrs
10000hrs
101(C) 55°C 0.0007
102 (C) 85°C 0.0006
103 (C) 105°C 0.0008

## 3.2. Test data

### 3.2.1 Data Set 1, 55°C,60mA (Lumen Maintenance)

| Sample Number (2700K) | Φ(lm) | Lumen Maintenance (%) | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | 0hr (Initial) | 1000hrs | 2000hrs | 3000hrs | 4000hrs | 5000hrs | 6000hrs | 7000hrs | 8000hrs | 9000hrs | 10000hrs |
| S01 | 23.17 | 100.17 | 99.97 | 99.76 | 99.53 | 99.28 | 99.08 | 98.86 | 98.65 | 98.48 | 98.23 |
| S02 | 25.27 | 100.17 | 99.97 | 99.78 | 99.55 | 99.33 | 99.13 | 98.96 | 98.79 | 98.62 | 98.37 |
| S03 | 24.73 | 100.14 | 99.95 | 99.75 | 99.53 | 99.27 | 99.07 | 98.90 | 98.73 | 98.51 | 98.35 |
| S04 | 23.86 | 100.18 | 99.97 | 99.76 | 99.51 | 99.31 | 99.11 | 98.93 | 98.71 | 98.54 | 98.30 |
| S05 | 24.84 | 100.18 | 99.99 | 99.79 | 99.54 | 99.34 | 99.14 | 98.92 | 98.70 | 98.53 | 98.28 |
| S06 | 24.39 | 100.17 | 99.97 | 99.77 | 99.57 | 99.38 | 99.12 | 98.94 | 98.78 | 98.56 | 98.32 |
| S07 | 25.71 | 100.17 | 99.97 | 99.76 | 99.54 | 99.31 | 99.09 | 98.87 | 98.71 | 98.54 | 98.29 |
| S08 | 23.06 | 100.16 | 99.95 | 99.73 | 99.51 | 99.29 | 99.06 | 98.89 | 98.72 | 98.50 | 98.26 |
| S09 | 23.35 | 100.17 | 99.98 | 99.78 | 99.56 | 99.34 | 99.14 | 98.96 | 98.78 | 98.57 | 98.32 |
| S10 | 24.84 | 100.14 | 99.95 | 99.75 | 99.55 | 99.35 | 99.15 | 98.98 | 98.76 | 98.59 | 98.43 |
| S11 | 24.90 | 100.16 | 99.94 | 99.73 | 99.51 | 99.28 | 99.08 | 98.91 | 98.69 | 98.47 | 98.23 |
| S12 | 23.95 | 100.18 | 99.97 | 99.76 | 99.53 | 99.28 | 99.03 | 98.81 | 98.63 | 98.41 | 98.17 |
| S13 | 21.37 | 100.17 | 99.98 | 99.78 | 99.53 | 99.30 | 99.05 | 98.88 | 98.66 | 98.50 | 98.34 |
| S14 | 21.29 | 100.15 | 99.94 | 99.74 | 99.54 | 99.29 | 99.06 | 98.89 | 98.72 | 98.54 | 98.38 |
| S15 | 24.84 | 100.18 | 99.97 | 99.76 | 99.56 | 99.36 | 99.13 | 98.92 | 98.74 | 98.57 | 98.33 |
| S16 | 24.85 | 100.16 | 99.94 | 99.73 | 99.51 | 99.28 | 99.03 | 98.86 | 98.68 | 98.52 | 98.36 |
| S17 | 25.56 | 100.16 | 99.95 | 99.75 | 99.55 | 99.35 | 99.15 | 98.99 | 98.77 | 98.59 | 98.35 |
| S18 | 23.15 | 100.15 | 99.94 | 99.73 | 99.53 | 99.33 | 99.13 | 98.95 | 98.73 | 98.52 | 98.27 |
| S19 | 24.32 | 100.19 | 99.99 | 99.78 | 99.58 | 99.36 | 99.16 | 98.99 | 98.77 | 98.60 | 98.45 |
| S20 | 25.41 | 100.15 | 99.94 | 99.74 | 99.54 | 99.29 | 99.09 | 98.87 | 98.70 | 98.52 | 98.27 |
| S21 | 23.36 | 98.80 | 98.60 | 98.40 | 98.20 | 98.00 | 97.79 | 97.57 | 97.40 | 97.24 | 97.09 |
| S22 | 23.26 | 100.17 | 99.95 | 99.74 | 99.52 | 99.32 | 99.12 | 98.95 | 98.78 | 98.61 | 98.36 |
| S23 | 22.13 | 100.14 | 99.93 | 99.73 | 99.51 | 99.25 | 99.00 | 98.83 | 98.62 | 98.40 | 98.24 |
| S24 | 22.62 | 100.19 | 99.99 | 99.79 | 99.54 | 99.34 | 99.12 | 98.90 | 98.72 | 98.51 | 98.26 |
| S25 | 24.96 | 100.15 | 99.96 | 99.74 | 99.49 | 99.24 | 99.01 | 98.84 | 98.67 | 98.50 | 98.34 |
| Average | 23.97 | 100.11 | 99.91 | 99.70 | 99.48 | 99.26 | 99.04 | 98.85 | 98.66 | 98.48 | 98.26 |
| Median | 24.32 | 100.17 | 99.96 | 99.75 | 99.53 | 99.31 | 99.09 | 98.90 | 98.72 | 98.52 | 98.32 |
| Std.dev | 1.23 | 0.27 | 0.27 | 0.27 | 0.26 | 0.26 | 0.26 | 0.27 | 0.26 | 0.26 | 0.25 |
| Max | 25.71 | 100.19 | 99.99 | 99.79 | 99.58 | 99.38 | 99.16 | 98.99 | 98.79 | 98.62 | 98.45 |
| Min | 21.29 | 98.80 | 98.60 | 98.40 | 98.20 | 98.00 | 97.79 | 97.57 | 97.40 | 97.24 | 97.09 |

| Sample Number (3000K) | Φ(lm) | Lumen Maintenance (%) | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | 0hr (Initial) | 1000hrs | 2000hrs | 3000hrs | 4000hrs | 5000hrs | 6000hrs | 7000hrs | 8000hrs | 9000hrs | 10000hrs |
| S01 | 24.38 | 100.03 | 99.82 | 99.60 | 99.38 | 99.16 | 98.93 | 98.76 | 98.59 | 98.37 | 98.13 |
| S02 | 24.67 | 100.04 | 99.85 | 99.65 | 99.43 | 99.21 | 99.01 | 98.83 | 98.65 | 98.44 | 98.19 |
| S03 | 26.16 | 100.01 | 99.82 | 99.62 | 99.42 | 99.22 | 99.02 | 98.85 | 98.63 | 98.46 | 98.30 |
| S04 | 26.22 | 100.03 | 99.81 | 99.60 | 99.38 | 99.15 | 98.95 | 98.78 | 98.56 | 98.34 | 98.10 |
| S05 | 25.27 | 100.05 | 99.84 | 99.63 | 99.40 | 99.15 | 98.90 | 98.68 | 98.50 | 98.28 | 98.04 |
| S06 | 22.69 | 100.04 | 99.85 | 99.65 | 99.40 | 99.17 | 98.92 | 98.75 | 98.53 | 98.37 | 98.21 |
| S07 | 22.61 | 100.02 | 99.81 | 99.61 | 99.41 | 99.16 | 98.93 | 98.76 | 98.59 | 98.41 | 98.25 |
| S08 | 26.16 | 100.05 | 99.84 | 99.63 | 99.43 | 99.23 | 99.00 | 98.79 | 98.61 | 98.44 | 98.20 |
| S09 | 26.17 | 100.03 | 99.81 | 99.60 | 99.38 | 99.15 | 98.90 | 98.73 | 98.55 | 98.39 | 98.23 |
| S10 | 26.88 | 100.03 | 99.82 | 99.62 | 99.42 | 99.22 | 99.02 | 98.86 | 98.64 | 98.46 | 98.22 |
| S11 | 24.47 | 100.02 | 99.81 | 99.60 | 99.40 | 99.20 | 99.00 | 98.82 | 98.60 | 98.39 | 98.14 |
| S12 | 25.64 | 100.06 | 99.86 | 99.65 | 99.45 | 99.23 | 99.03 | 98.86 | 98.64 | 98.47 | 98.32 |
| S13 | 26.73 | 100.02 | 99.81 | 99.61 | 99.41 | 99.16 | 98.96 | 98.74 | 98.57 | 98.39 | 98.14 |
| S14 | 24.68 | 98.67 | 98.47 | 98.27 | 98.07 | 97.87 | 97.66 | 97.44 | 97.27 | 97.11 | 96.96 |
| S15 | 24.58 | 100.04 | 99.82 | 99.61 | 99.39 | 99.19 | 98.99 | 98.82 | 98.65 | 98.48 | 98.23 |
| S16 | 23.45 | 100.01 | 99.80 | 99.60 | 99.38 | 99.12 | 98.87 | 98.70 | 98.49 | 98.27 | 98.11 |
| S17 | 23.94 | 100.06 | 99.86 | 99.66 | 99.41 | 99.21 | 98.99 | 98.77 | 98.59 | 98.38 | 98.13 |
| S18 | 26.28 | 100.02 | 99.83 | 99.61 | 99.36 | 99.11 | 98.88 | 98.71 | 98.54 | 98.37 | 98.21 |
| S19 | 24.49 | 100.04 | 99.84 | 99.63 | 99.40 | 99.15 | 98.95 | 98.73 | 98.52 | 98.35 | 98.10 |
| S20 | 26.59 | 100.04 | 99.84 | 99.65 | 99.42 | 99.20 | 99.00 | 98.83 | 98.66 | 98.49 | 98.24 |
| S21 | 26.05 | 100.01 | 99.82 | 99.62 | 99.40 | 99.14 | 98.94 | 98.77 | 98.60 | 98.38 | 98.22 |
| S22 | 25.18 | 100.05 | 99.84 | 99.63 | 99.38 | 99.18 | 98.98 | 98.80 | 98.58 | 98.41 | 98.17 |
| S23 | 26.16 | 100.05 | 99.86 | 99.66 | 99.41 | 99.21 | 99.01 | 98.79 | 98.57 | 98.40 | 98.15 |
| S24 | 25.71 | 100.04 | 99.84 | 99.64 | 99.44 | 99.25 | 98.99 | 98.81 | 98.65 | 98.43 | 98.19 |
| S25 | 27.03 | 100.04 | 99.84 | 99.63 | 99.41 | 99.18 | 98.96 | 98.74 | 98.58 | 98.41 | 98.16 |
| Average | 25.29 | 99.98 | 99.78 | 99.57 | 99.35 | 99.13 | 98.91 | 98.72 | 98.53 | 98.35 | 98.13 |
| Median | 25.64 | 100.04 | 99.83 | 99.62 | 99.40 | 99.18 | 98.96 | 98.77 | 98.59 | 98.39 | 98.19 |
| Std.dev | 1.23 | 0.27 | 0.27 | 0.27 | 0.26 | 0.26 | 0.26 | 0.27 | 0.26 | 0.26 | 0.25 |
| Max | 27.03 | 100.06 | 99.86 | 99.66 | 99.45 | 99.25 | 99.03 | 98.86 | 98.66 | 98.49 | 98.32 |
| Min | 22.61 | 98.67 | 98.47 | 98.27 | 98.07 | 97.87 | 97.66 | 97.44 | 97.27 | 97.11 | 96.96 |

| Sample Number (6500K) | Φ(lm) | Lumen Maintenance (%) | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | 0hr (Initial) | 1000hrs | 2000hrs | 3000hrs | 4000hrs | 5000hrs | 6000hrs | 7000hrs | 8000hrs | 9000hrs | 10000hrs |
| **S01** | 27.96 | 100.61 | 100.39 | 100.18 | 99.96 | 99.73 | 99.53 | 99.36 | 99.14 | 98.92 | 98.68 |
| **S02** | 27.01 | 100.63 | 100.42 | 100.21 | 99.98 | 99.73 | 99.48 | 99.26 | 99.08 | 98.86 | 98.62 |
| **S03** | 24.43 | 100.62 | 100.43 | 100.23 | 99.98 | 99.75 | 99.50 | 99.33 | 99.11 | 98.95 | 98.79 |
| **S04** | 24.35 | 100.60 | 100.39 | 100.19 | 99.99 | 99.74 | 99.51 | 99.34 | 99.17 | 98.99 | 98.83 |
| **S05** | 27.90 | 100.63 | 100.42 | 100.21 | 100.01 | 99.81 | 99.58 | 99.37 | 99.19 | 99.02 | 98.78 |
| **S06** | 27.91 | 100.61 | 100.39 | 100.18 | 99.96 | 99.73 | 99.48 | 99.31 | 99.13 | 98.97 | 98.81 |
| **S07** | 28.62 | 100.61 | 100.40 | 100.20 | 100.00 | 99.80 | 99.60 | 99.44 | 99.22 | 99.04 | 98.80 |
| **S08** | 26.21 | 100.60 | 100.39 | 100.18 | 99.98 | 99.78 | 99.58 | 99.40 | 99.18 | 98.97 | 98.72 |
| **S09** | 27.38 | 100.64 | 100.44 | 100.23 | 100.03 | 99.81 | 99.61 | 99.44 | 99.22 | 99.05 | 98.90 |
| **S10** | 28.47 | 100.60 | 100.39 | 100.19 | 99.99 | 99.74 | 99.54 | 99.32 | 99.15 | 98.97 | 98.72 |
| **S11** | 26.42 | 99.25 | 99.05 | 98.85 | 98.65 | 98.45 | 98.24 | 98.02 | 97.85 | 97.69 | 97.54 |
| **S12** | 26.92 | 100.63 | 100.42 | 100.21 | 99.96 | 99.76 | 99.56 | 99.38 | 99.16 | 98.99 | 98.75 |
| **S13** | 27.90 | 100.63 | 100.44 | 100.24 | 99.99 | 99.79 | 99.59 | 99.37 | 99.15 | 98.98 | 98.73 |
| **S14** | 27.45 | 100.62 | 100.42 | 100.22 | 100.02 | 99.83 | 99.57 | 99.39 | 99.23 | 99.01 | 98.77 |
| **S15** | 28.77 | 100.62 | 100.42 | 100.21 | 99.99 | 99.76 | 99.54 | 99.32 | 99.16 | 98.99 | 98.74 |
| **S16** | 26.12 | 100.61 | 100.40 | 100.18 | 99.96 | 99.74 | 99.51 | 99.34 | 99.17 | 98.95 | 98.71 |
| **S17** | 26.41 | 100.62 | 100.43 | 100.23 | 100.01 | 99.79 | 99.59 | 99.41 | 99.23 | 99.02 | 98.77 |
| **S18** | 27.90 | 100.59 | 100.40 | 100.20 | 100.00 | 99.80 | 99.60 | 99.43 | 99.21 | 99.04 | 98.88 |
| **S19** | 26.32 | 100.62 | 100.40 | 100.19 | 99.97 | 99.77 | 99.57 | 99.40 | 99.23 | 99.06 | 98.81 |
| **S20** | 25.19 | 100.59 | 100.38 | 100.18 | 99.96 | 99.70 | 99.45 | 99.28 | 99.07 | 98.85 | 98.69 |
| **S21** | 25.68 | 100.64 | 100.44 | 100.24 | 99.99 | 99.79 | 99.57 | 99.35 | 99.17 | 98.96 | 98.71 |
| **S22** | 28.02 | 100.60 | 100.41 | 100.19 | 99.94 | 99.69 | 99.46 | 99.29 | 99.12 | 98.95 | 98.79 |
| **S23** | 26.23 | 100.62 | 100.42 | 100.21 | 99.98 | 99.73 | 99.53 | 99.31 | 99.10 | 98.93 | 98.68 |
| **S24** | 28.33 | 100.62 | 100.42 | 100.23 | 100.00 | 99.78 | 99.58 | 99.41 | 99.24 | 99.07 | 98.82 |
| **S25** | 27.79 | 100.59 | 100.40 | 100.20 | 99.98 | 99.72 | 99.52 | 99.35 | 99.18 | 98.96 | 98.80 |
| **Average** | 27.03 | 100.56 | 100.36 | 100.15 | 99.93 | 99.71 | 99.49 | 99.30 | 99.11 | 98.93 | 98.71 |
| **Median** | 27.38 | 100.62 | 100.41 | 100.20 | 99.98 | 99.76 | 99.54 | 99.35 | 99.17 | 98.97 | 98.77 |
| **Std.dev** | 1.23 | 0.27 | 0.27 | 0.27 | 0.26 | 0.26 | 0.26 | 0.27 | 0.26 | 0.26 | 0.25 |
| **Max** | 28.77 | 100.64 | 100.44 | 100.24 | 100.03 | 99.83 | 99.61 | 99.44 | 99.24 | 99.07 | 98.90 |
| **Min** | 24.35 | 99.25 | 99.05 | 98.85 | 98.65 | 98.45 | 98.24 | 98.02 | 97.85 | 97.69 | 97.54 |

### 3.2.2 Data Set 1, 55°C,60mA (Forward Voltage)

| Sample Number (2700K) | Forward Voltage(V) | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | 0hr (Initial) | 1000hrs | 2000hrs | 3000hrs | 4000hrs | 5000hrs | 6000hrs | 7000hrs | 8000hrs | 9000hrs | 10000hrs |
| S01 | 2.89 | 2.87 | 2.89 | 2.90 | 2.91 | 2.91 | 2.89 | 2.90 | 2.90 | 2.89 | 2.91 |
| S02 | 2.93 | 2.94 | 2.95 | 2.95 | 2.93 | 2.93 | 2.94 | 2.96 | 2.93 | 2.93 | 2.95 |
| S03 | 2.92 | 2.94 | 2.94 | 2.91 | 2.92 | 2.95 | 2.93 | 2.92 | 2.94 | 2.93 | 2.94 |
| S04 | 2.88 | 2.90 | 2.90 | 2.89 | 2.90 | 2.88 | 2.90 | 2.90 | 2.90 | 2.90 | 2.90 |
| S05 | 2.90 | 2.92 | 2.93 | 2.92 | 2.92 | 2.91 | 2.90 | 2.92 | 2.92 | 2.92 | 2.90 |
| S06 | 2.88 | 2.87 | 2.86 | 2.90 | 2.88 | 2.88 | 2.89 | 2.89 | 2.89 | 2.88 | 2.90 |
| S07 | 2.96 | 2.98 | 2.98 | 2.98 | 2.97 | 2.96 | 2.99 | 2.96 | 2.98 | 2.98 | 2.99 |
| S08 | 2.89 | 2.91 | 2.89 | 2.90 | 2.89 | 2.90 | 2.91 | 2.90 | 2.91 | 2.91 | 2.88 |
| S09 | 2.96 | 2.98 | 2.98 | 2.98 | 2.95 | 2.98 | 2.97 | 2.96 | 2.98 | 2.95 | 2.97 |
| S10 | 2.90 | 2.91 | 2.91 | 2.91 | 2.90 | 2.92 | 2.92 | 2.90 | 2.91 | 2.91 | 2.91 |
| S11 | 2.92 | 2.93 | 2.93 | 2.91 | 2.93 | 2.91 | 2.92 | 2.92 | 2.93 | 2.93 | 2.93 |
| S12 | 2.91 | 2.92 | 2.91 | 2.91 | 2.92 | 2.93 | 2.89 | 2.93 | 2.93 | 2.90 | 2.93 |
| S13 | 2.92 | 2.92 | 2.94 | 2.94 | 2.95 | 2.93 | 2.93 | 2.92 | 2.94 | 2.94 | 2.91 |
| S14 | 2.93 | 2.92 | 2.95 | 2.95 | 2.95 | 2.95 | 2.93 | 2.93 | 2.96 | 2.95 | 2.95 |
| S15 | 2.93 | 2.94 | 2.93 | 2.92 | 2.93 | 2.95 | 2.93 | 2.93 | 2.93 | 2.95 | 2.92 |
| S16 | 2.96 | 2.95 | 2.98 | 2.96 | 2.98 | 2.95 | 2.97 | 2.96 | 2.95 | 2.95 | 2.96 |
| S17 | 2.94 | 2.94 | 2.95 | 2.96 | 2.95 | 2.96 | 2.96 | 2.95 | 2.96 | 2.94 | 2.93 |
| S18 | 2.93 | 2.95 | 2.94 | 2.95 | 2.93 | 2.94 | 2.95 | 2.94 | 2.94 | 2.95 | 2.94 |
| S19 | 2.96 | 2.97 | 2.97 | 2.96 | 2.96 | 2.98 | 2.96 | 2.96 | 2.97 | 2.96 | 2.98 |
| S20 | 2.90 | 2.91 | 2.91 | 2.91 | 2.92 | 2.91 | 2.91 | 2.91 | 2.92 | 2.91 | 2.91 |
| S21 | 2.95 | 2.96 | 2.97 | 2.95 | 2.97 | 2.95 | 2.95 | 2.98 | 2.95 | 2.96 | 2.97 |
| S22 | 2.88 | 2.88 | 2.90 | 2.88 | 2.88 | 2.89 | 2.90 | 2.90 | 2.88 | 2.87 | 2.88 |
| S23 | 2.89 | 2.90 | 2.88 | 2.90 | 2.91 | 2.91 | 2.87 | 2.89 | 2.89 | 2.90 | 2.89 |
| S24 | 2.95 | 2.95 | 2.97 | 2.95 | 2.96 | 2.95 | 2.98 | 2.97 | 2.97 | 2.97 | 2.97 |
| S25 | 2.87 | 2.87 | 2.85 | 2.87 | 2.87 | 2.86 | 2.85 | 2.87 | 2.87 | 2.88 | 2.87 |
| Average | 2.89 | 2.87 | 2.89 | 2.90 | 2.91 | 2.91 | 2.89 | 2.90 | 2.90 | 2.89 | 2.91 |
| Median | 2.92 | 2.93 | 2.93 | 2.93 | 2.93 | 2.93 | 2.93 | 2.93 | 2.93 | 2.93 | 2.93 |
| Std.dev | 2.92 | 2.92 | 2.93 | 2.92 | 2.93 | 2.93 | 2.93 | 2.92 | 2.93 | 2.93 | 2.93 |
| Max | 0.03 | 0.03 | 0.04 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 |
| Min | 2.96 | 2.98 | 2.98 | 2.98 | 2.98 | 2.98 | 2.99 | 2.98 | 2.98 | 2.98 | 2.99 |

| Sample Number (3000K) | Forward Voltage(V) | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | 0hr (Initial) | 1000hrs | 2000hrs | 3000hrs | 4000hrs | 5000hrs | 6000hrs | 7000hrs | 8000hrs | 9000hrs | 10000hrs |
| **S01** | 3.03 | 3.04 | 3.03 | 3.03 | 3.04 | 3.05 | 3.01 | 3.05 | 3.05 | 3.02 | 3.05 |
| **S02** | 3.04 | 3.04 | 3.06 | 3.06 | 3.07 | 3.05 | 3.05 | 3.04 | 3.06 | 3.06 | 3.03 |
| **S03** | 3.05 | 3.04 | 3.07 | 3.07 | 3.07 | 3.07 | 3.05 | 3.05 | 3.08 | 3.07 | 3.07 |
| **S04** | 3.05 | 3.06 | 3.05 | 3.04 | 3.05 | 3.07 | 3.05 | 3.05 | 3.05 | 3.07 | 3.04 |
| **S05** | 3.08 | 3.07 | 3.10 | 3.08 | 3.10 | 3.07 | 3.09 | 3.08 | 3.07 | 3.07 | 3.08 |
| **S06** | 3.06 | 3.06 | 3.07 | 3.08 | 3.07 | 3.08 | 3.08 | 3.07 | 3.08 | 3.06 | 3.05 |
| **S07** | 3.05 | 3.07 | 3.06 | 3.07 | 3.05 | 3.06 | 3.07 | 3.06 | 3.06 | 3.07 | 3.06 |
| **S08** | 3.08 | 3.09 | 3.09 | 3.08 | 3.08 | 3.10 | 3.08 | 3.08 | 3.09 | 3.08 | 3.10 |
| **S09** | 3.02 | 3.03 | 3.03 | 3.03 | 3.04 | 3.03 | 3.03 | 3.03 | 3.04 | 3.03 | 3.03 |
| **S10** | 3.07 | 3.08 | 3.09 | 3.07 | 3.09 | 3.07 | 3.07 | 3.10 | 3.07 | 3.08 | 3.09 |
| **S11** | 3.00 | 3.00 | 3.02 | 3.00 | 3.00 | 3.01 | 3.02 | 3.02 | 3.00 | 2.99 | 3.00 |
| **S12** | 3.00 | 3.02 | 3.02 | 3.01 | 3.02 | 3.00 | 3.02 | 3.02 | 3.02 | 3.02 | 3.02 |
| **S13** | 3.02 | 3.04 | 3.05 | 3.04 | 3.04 | 3.03 | 3.02 | 3.04 | 3.04 | 3.04 | 3.02 |
| **S14** | 3.00 | 2.99 | 2.98 | 3.02 | 3.00 | 3.00 | 3.01 | 3.01 | 3.01 | 3.00 | 3.02 |
| **S15** | 3.08 | 3.10 | 3.10 | 3.10 | 3.09 | 3.08 | 3.11 | 3.08 | 3.10 | 3.10 | 3.11 |
| **S16** | 3.01 | 3.03 | 3.01 | 3.02 | 3.01 | 3.02 | 3.03 | 3.02 | 3.03 | 3.03 | 3.00 |
| **S17** | 3.08 | 3.10 | 3.10 | 3.10 | 3.07 | 3.10 | 3.09 | 3.08 | 3.10 | 3.07 | 3.09 |
| **S18** | 3.01 | 3.02 | 3.00 | 3.02 | 3.03 | 3.03 | 2.99 | 3.01 | 3.01 | 3.02 | 3.01 |
| **S19** | 3.07 | 3.07 | 3.09 | 3.07 | 3.08 | 3.07 | 3.10 | 3.09 | 3.09 | 3.09 | 3.09 |
| **S20** | 2.99 | 2.99 | 2.97 | 2.99 | 2.99 | 2.98 | 2.97 | 2.99 | 2.99 | 3.00 | 2.99 |
| **S21** | 3.01 | 2.99 | 3.01 | 3.02 | 3.03 | 3.03 | 3.01 | 3.02 | 3.02 | 3.01 | 3.03 |
| **S22** | 3.05 | 3.06 | 3.07 | 3.07 | 3.05 | 3.05 | 3.06 | 3.08 | 3.05 | 3.05 | 3.07 |
| **S23** | 3.04 | 3.06 | 3.06 | 3.03 | 3.04 | 3.07 | 3.05 | 3.04 | 3.06 | 3.05 | 3.06 |
| **S24** | 3.02 | 3.03 | 3.03 | 3.03 | 3.02 | 3.04 | 3.04 | 3.02 | 3.03 | 3.03 | 3.03 |
| **S25** | 3.04 | 3.05 | 3.05 | 3.03 | 3.05 | 3.03 | 3.04 | 3.04 | 3.05 | 3.05 | 3.05 |
| **Average** | 3.04 | 3.05 | 3.05 | 3.05 | 3.05 | 3.05 | 3.05 | 3.05 | 3.05 | 3.05 | 3.05 |
| **Median** | 3.04 | 3.04 | 3.05 | 3.04 | 3.05 | 3.05 | 3.05 | 3.04 | 3.05 | 3.05 | 3.05 |
| **Std.dev** | 0.03 | 0.03 | 0.04 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 |
| **Max** | 3.08 | 3.10 | 3.10 | 3.10 | 3.10 | 3.10 | 3.11 | 3.10 | 3.10 | 3.10 | 3.11 |
| **Min** | 2.99 | 2.99 | 2.97 | 2.99 | 2.99 | 2.98 | 2.97 | 2.99 | 2.99 | 2.99 | 2.99 |

| Sample Number (6500K) | Forward Voltage(V) | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | 0hr (Initial) | 1000hrs | 2000hrs | 3000hrs | 4000hrs | 5000hrs | 6000hrs | 7000hrs | 8000hrs | 9000hrs | 10000hrs |
| **S01** | 2.97 | 2.99 | 3.00 | 2.99 | 2.99 | 2.98 | 2.97 | 2.99 | 2.99 | 2.99 | 2.97 |
| **S02** | 2.95 | 2.94 | 2.93 | 2.97 | 2.95 | 2.95 | 2.96 | 2.96 | 2.96 | 2.95 | 2.97 |
| **S03** | 3.03 | 3.05 | 3.05 | 3.05 | 3.04 | 3.03 | 3.06 | 3.03 | 3.05 | 3.05 | 3.06 |
| **S04** | 2.96 | 2.98 | 2.96 | 2.97 | 2.96 | 2.97 | 2.98 | 2.97 | 2.98 | 2.98 | 2.95 |
| **S05** | 3.03 | 3.05 | 3.05 | 3.05 | 3.02 | 3.05 | 3.04 | 3.03 | 3.05 | 3.02 | 3.04 |
| **S06** | 2.97 | 2.98 | 2.98 | 2.98 | 2.97 | 2.99 | 2.99 | 2.97 | 2.98 | 2.98 | 2.98 |
| **S07** | 2.99 | 3.00 | 3.00 | 2.98 | 3.00 | 2.98 | 2.99 | 2.99 | 3.00 | 3.00 | 3.00 |
| **S08** | 2.98 | 2.99 | 2.98 | 2.98 | 2.99 | 3.00 | 2.96 | 3.00 | 3.00 | 2.97 | 3.00 |
| **S09** | 2.99 | 2.99 | 3.01 | 3.01 | 3.02 | 3.00 | 3.00 | 2.99 | 3.01 | 3.01 | 2.98 |
| **S10** | 3.00 | 3.02 | 3.01 | 3.02 | 3.00 | 3.01 | 3.02 | 3.01 | 3.01 | 3.02 | 3.01 |
| **S11** | 3.03 | 3.04 | 3.04 | 3.03 | 3.03 | 3.05 | 3.03 | 3.03 | 3.04 | 3.03 | 3.05 |
| **S12** | 2.97 | 2.98 | 2.98 | 2.98 | 2.99 | 2.98 | 2.98 | 2.98 | 2.99 | 2.98 | 2.98 |
| **S13** | 3.02 | 3.03 | 3.04 | 3.02 | 3.04 | 3.02 | 3.02 | 3.05 | 3.02 | 3.03 | 3.04 |
| **S14** | 2.95 | 2.95 | 2.97 | 2.95 | 2.95 | 2.96 | 2.97 | 2.97 | 2.95 | 2.94 | 2.95 |
| **S15** | 2.96 | 2.97 | 2.95 | 2.97 | 2.98 | 2.98 | 2.94 | 2.96 | 2.96 | 2.97 | 2.96 |
| **S16** | 2.96 | 2.94 | 2.96 | 2.97 | 2.98 | 2.98 | 2.96 | 2.97 | 2.97 | 2.96 | 2.98 |
| **S17** | 3.00 | 3.01 | 3.02 | 3.02 | 3.00 | 3.00 | 3.01 | 3.03 | 3.00 | 3.00 | 3.02 |
| **S18** | 2.99 | 3.01 | 3.01 | 2.98 | 2.99 | 3.02 | 3.00 | 2.99 | 3.01 | 3.00 | 3.01 |
| **S19** | 2.95 | 2.97 | 2.97 | 2.96 | 2.97 | 2.95 | 2.97 | 2.97 | 2.97 | 2.97 | 2.97 |
| **S20** | 3.02 | 3.02 | 3.04 | 3.02 | 3.03 | 3.02 | 3.05 | 3.04 | 3.04 | 3.04 | 3.04 |
| **S21** | 2.94 | 2.94 | 2.92 | 2.94 | 2.94 | 2.93 | 2.92 | 2.94 | 2.94 | 2.95 | 2.94 |
| **S22** | 2.99 | 2.99 | 3.01 | 3.01 | 3.02 | 3.00 | 3.00 | 2.99 | 3.01 | 3.01 | 2.98 |
| **S23** | 3.00 | 2.99 | 3.02 | 3.02 | 3.02 | 3.02 | 3.00 | 3.00 | 3.03 | 3.02 | 3.02 |
| **S24** | 3.00 | 3.01 | 3.00 | 2.99 | 3.00 | 3.02 | 3.00 | 3.00 | 3.00 | 3.02 | 2.99 |
| **S25** | 3.03 | 3.02 | 3.05 | 3.03 | 3.05 | 3.02 | 3.04 | 3.03 | 3.02 | 3.02 | 3.03 |
| **Average** | 2.99 | 3.00 | 3.00 | 3.00 | 3.00 | 3.00 | 3.00 | 3.00 | 3.00 | 3.00 | 3.00 |
| **Median** | 2.99 | 2.99 | 3.00 | 2.99 | 3.00 | 3.00 | 3.00 | 2.99 | 3.00 | 3.00 | 3.00 |
| **Std.dev** | 0.03 | 0.03 | 0.04 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 |
| **Max** | 3.03 | 3.05 | 3.05 | 3.05 | 3.05 | 3.05 | 3.06 | 3.05 | 3.05 | 3.05 | 3.06 |
| **Min** | 2.94 | 2.94 | 2.92 | 2.94 | 2.94 | 2.93 | 2.92 | 2.94 | 2.94 | 2.94 | 2.94 |

### 3.2.3 Data Set 1, 55°C,60mA (Chromaticity Shift)

| Sample Number (2700K) | Chromaticity Shift (Δu'v') | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 0hr (Initial) | | 1000hrs | 2000hrs | 3000hrs | 4000hrs | 5000hrs | 6000hrs | 7000hrs | 8000hrs | 9000hrs | 10000hrs |
| S01 | 0.2618 | 0.5272 | 0.0002 | 0.0001 | 0.0003 | 0.0005 | 0.0007 | 0.0011 | 0.0013 | 0.0015 | 0.0017 | 0.0020 |
| S02 | 0.2608 | 0.5269 | 0.0002 | 0.0002 | 0.0004 | 0.0006 | 0.0007 | 0.0008 | 0.0011 | 0.0013 | 0.0015 | 0.0017 |
| S03 | 0.2597 | 0.5294 | 0.0001 | 0.0001 | 0.0003 | 0.0005 | 0.0006 | 0.0007 | 0.0009 | 0.0011 | 0.0014 | 0.0016 |
| S04 | 0.2595 | 0.5291 | 0.0001 | 0.0002 | 0.0004 | 0.0007 | 0.0008 | 0.0009 | 0.0011 | 0.0013 | 0.0016 | 0.0017 |
| S05 | 0.2593 | 0.5294 | 0.0002 | 0.0002 | 0.0004 | 0.0006 | 0.0008 | 0.0008 | 0.0010 | 0.0012 | 0.0014 | 0.0016 |
| S06 | 0.2599 | 0.5296 | 0.0002 | 0.0001 | 0.0003 | 0.0006 | 0.0007 | 0.0005 | 0.0008 | 0.0010 | 0.0012 | 0.0013 |
| S07 | 0.2602 | 0.5296 | 0.0002 | 0.0002 | 0.0004 | 0.0006 | 0.0007 | 0.0007 | 0.0009 | 0.0012 | 0.0014 | 0.0016 |
| S08 | 0.2596 | 0.5293 | 0.0002 | 0.0001 | 0.0002 | 0.0004 | 0.0006 | 0.0008 | 0.0010 | 0.0013 | 0.0015 | 0.0017 |
| S09 | 0.2596 | 0.5292 | 0.0002 | 0.0002 | 0.0003 | 0.0005 | 0.0006 | 0.0010 | 0.0012 | 0.0014 | 0.0017 | 0.0018 |
| S10 | 0.2592 | 0.5293 | 0.0001 | 0.0001 | 0.0002 | 0.0004 | 0.0005 | 0.0008 | 0.0010 | 0.0012 | 0.0015 | 0.0017 |
| S11 | 0.2611 | 0.5282 | 0.0002 | 0.0002 | 0.0004 | 0.0007 | 0.0008 | 0.0007 | 0.0009 | 0.0011 | 0.0014 | 0.0016 |
| S12 | 0.2617 | 0.5285 | 0.0002 | 0.0001 | 0.0002 | 0.0004 | 0.0006 | 0.0008 | 0.0011 | 0.0013 | 0.0015 | 0.0017 |
| S13 | 0.2611 | 0.5279 | 0.0002 | 0.0001 | 0.0002 | 0.0004 | 0.0006 | 0.0010 | 0.0012 | 0.0014 | 0.0017 | 0.0019 |
| S14 | 0.2614 | 0.5284 | 0.0001 | 0.0001 | 0.0002 | 0.0004 | 0.0006 | 0.0007 | 0.0009 | 0.0011 | 0.0013 | 0.0014 |
| S15 | 0.2606 | 0.5281 | 0.0001 | 0.0001 | 0.0003 | 0.0006 | 0.0007 | 0.0008 | 0.0010 | 0.0013 | 0.0015 | 0.0016 |
| S16 | 0.2610 | 0.5266 | 0.0002 | 0.0001 | 0.0003 | 0.0005 | 0.0007 | 0.0008 | 0.0011 | 0.0013 | 0.0016 | 0.0017 |
| S17 | 0.2612 | 0.5267 | 0.0002 | 0.0001 | 0.0003 | 0.0005 | 0.0006 | 0.0011 | 0.0014 | 0.0016 | 0.0019 | 0.0021 |
| S18 | 0.2609 | 0.5268 | 0.0001 | 0.0002 | 0.0004 | 0.0007 | 0.0008 | 0.0008 | 0.0011 | 0.0013 | 0.0016 | 0.0018 |
| S19 | 0.2613 | 0.5270 | 0.0002 | 0.0002 | 0.0003 | 0.0006 | 0.0007 | 0.0008 | 0.0011 | 0.0013 | 0.0015 | 0.0016 |
| S20 | 0.2615 | 0.5272 | 0.0002 | 0.0002 | 0.0003 | 0.0006 | 0.0007 | 0.0008 | 0.0011 | 0.0013 | 0.0016 | 0.0018 |
| S21 | 0.2613 | 0.5268 | 0.0002 | 0.0002 | 0.0003 | 0.0005 | 0.0007 | 0.0008 | 0.0010 | 0.0013 | 0.0015 | 0.0016 |
| S22 | 0.2613 | 0.5269 | 0.0002 | 0.0002 | 0.0004 | 0.0006 | 0.0007 | 0.0008 | 0.0011 | 0.0013 | 0.0016 | 0.0017 |
| S23 | 0.2613 | 0.5268 | 0.0001 | 0.0002 | 0.0004 | 0.0006 | 0.0007 | 0.0006 | 0.0008 | 0.0010 | 0.0012 | 0.0014 |
| S24 | 0.2596 | 0.5291 | 0.0002 | 0.0002 | 0.0003 | 0.0005 | 0.0006 | 0.0009 | 0.0012 | 0.0014 | 0.0016 | 0.0019 |
| S25 | 0.2598 | 0.5294 | 0.0002 | 0.0002 | 0.0003 | 0.0006 | 0.0007 | 0.0009 | 0.0012 | 0.0014 | 0.0016 | 0.0019 |
| Average | 0.2606 | 0.5281 | 0.0002 | 0.0002 | 0.0003 | 0.0005 | 0.0007 | 0.0008 | 0.0011 | 0.0013 | 0.0015 | 0.0017 |
| Median | 0.2609 | 0.5282 | 0.0002 | 0.0002 | 0.0003 | 0.0006 | 0.0007 | 0.0008 | 0.0011 | 0.0013 | 0.0015 | 0.0017 |
| Std.dev | 0.0008 | 0.0011 | 0.0000 | 0.0000 | 0.0001 | 0.0001 | 0.0001 | 0.0001 | 0.0001 | 0.0001 | 0.0002 | 0.0002 |
| Max | 0.2618 | 0.5296 | 0.0002 | 0.0002 | 0.0004 | 0.0007 | 0.0008 | 0.0011 | 0.0014 | 0.0016 | 0.0019 | 0.0021 |
| Min | 0.2592 | 0.5266 | 0.0001 | 0.0001 | 0.0002 | 0.0004 | 0.0005 | 0.0005 | 0.0008 | 0.0010 | 0.0012 | 0.0013 |

| Sample Number ( 3000K) | Chromaticity Shift (Δu'v') | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 0hr (Initial) | | 1000hrs | 2000hrs | 3000hrs | 4000hrs | 5000hrs | 6000hrs | 7000hrs | 8000hrs | 9000hrs | 10000hrs |
| S01 | 0.2510 | 0.5180 | 0.0001 | 0.0001 | 0.0003 | 0.0003 | 0.0004 | 0.0005 | 0.0008 | 0.0010 | 0.0013 | 0.0014 |
| S02 | 0.2510 | 0.5179 | 0.0001 | 0.0001 | 0.0003 | 0.0003 | 0.0004 | 0.0003 | 0.0005 | 0.0007 | 0.0009 | 0.0011 |
| S03 | 0.2507 | 0.5177 | 0.0001 | 0.0002 | 0.0002 | 0.0002 | 0.0004 | 0.0005 | 0.0008 | 0.0010 | 0.0013 | 0.0014 |
| S04 | 0.2509 | 0.5178 | 0.0001 | 0.0002 | 0.0002 | 0.0002 | 0.0003 | 0.0008 | 0.0011 | 0.0013 | 0.0016 | 0.0018 |
| S05 | 0.2506 | 0.5179 | 0.0002 | 0.0001 | 0.0003 | 0.0004 | 0.0005 | 0.0005 | 0.0008 | 0.0010 | 0.0013 | 0.0015 |
| S06 | 0.2510 | 0.5181 | 0.0001 | 0.0001 | 0.0002 | 0.0003 | 0.0004 | 0.0005 | 0.0008 | 0.0010 | 0.0012 | 0.0013 |
| S07 | 0.2512 | 0.5183 | 0.0001 | 0.0001 | 0.0002 | 0.0003 | 0.0004 | 0.0005 | 0.0008 | 0.0010 | 0.0013 | 0.0015 |
| S08 | 0.2510 | 0.5179 | 0.0001 | 0.0001 | 0.0002 | 0.0002 | 0.0004 | 0.0005 | 0.0007 | 0.0010 | 0.0012 | 0.0013 |
| S09 | 0.2515 | 0.5183 | 0.0001 | 0.0002 | 0.0002 | 0.0002 | 0.0004 | 0.0008 | 0.0010 | 0.0012 | 0.0014 | 0.0017 |
| S10 | 0.2505 | 0.5180 | 0.0001 | 0.0001 | 0.0003 | 0.0003 | 0.0004 | 0.0005 | 0.0008 | 0.0010 | 0.0012 | 0.0014 |
| S11 | 0.2494 | 0.5205 | 0.0002 | 0.0002 | 0.0002 | 0.0002 | 0.0003 | 0.0004 | 0.0006 | 0.0008 | 0.0011 | 0.0013 |
| S12 | 0.2492 | 0.5202 | 0.0002 | 0.0001 | 0.0003 | 0.0004 | 0.0005 | 0.0006 | 0.0008 | 0.0010 | 0.0013 | 0.0014 |
| S13 | 0.2490 | 0.5205 | 0.0001 | 0.0002 | 0.0003 | 0.0003 | 0.0005 | 0.0005 | 0.0007 | 0.0009 | 0.0011 | 0.0013 |
| S14 | 0.2496 | 0.5207 | 0.0001 | 0.0002 | 0.0002 | 0.0003 | 0.0004 | 0.0002 | 0.0005 | 0.0007 | 0.0009 | 0.0010 |
| S15 | 0.2499 | 0.5207 | 0.0001 | 0.0001 | 0.0003 | 0.0003 | 0.0004 | 0.0004 | 0.0006 | 0.0009 | 0.0011 | 0.0013 |
| S16 | 0.2493 | 0.5204 | 0.0001 | 0.0002 | 0.0001 | 0.0001 | 0.0003 | 0.0005 | 0.0007 | 0.0010 | 0.0012 | 0.0014 |
| S17 | 0.2493 | 0.5202 | 0.0001 | 0.0001 | 0.0002 | 0.0002 | 0.0003 | 0.0006 | 0.0009 | 0.0011 | 0.0013 | 0.0016 |
| S18 | 0.2495 | 0.5205 | 0.0001 | 0.0001 | 0.0002 | 0.0003 | 0.0004 | 0.0006 | 0.0009 | 0.0011 | 0.0013 | 0.0016 |
| S19 | 0.2493 | 0.5203 | 0.0001 | 0.0001 | 0.0002 | 0.0002 | 0.0003 | 0.0007 | 0.0009 | 0.0011 | 0.0014 | 0.0015 |
| S20 | 0.2489 | 0.5204 | 0.0002 | 0.0002 | 0.0001 | 0.0001 | 0.0002 | 0.0005 | 0.0007 | 0.0009 | 0.0012 | 0.0014 |
| S21 | 0.2508 | 0.5193 | 0.0001 | 0.0001 | 0.0003 | 0.0004 | 0.0005 | 0.0004 | 0.0006 | 0.0008 | 0.0011 | 0.0013 |
| S22 | 0.2514 | 0.5196 | 0.0001 | 0.0002 | 0.0001 | 0.0001 | 0.0003 | 0.0005 | 0.0008 | 0.0010 | 0.0012 | 0.0014 |
| S23 | 0.2508 | 0.5190 | 0.0002 | 0.0002 | 0.0001 | 0.0001 | 0.0003 | 0.0007 | 0.0009 | 0.0011 | 0.0014 | 0.0016 |
| S24 | 0.2511 | 0.5195 | 0.0002 | 0.0002 | 0.0001 | 0.0001 | 0.0003 | 0.0004 | 0.0006 | 0.0008 | 0.0010 | 0.0011 |
| S25 | 0.2503 | 0.5192 | 0.0002 | 0.0002 | 0.0002 | 0.0003 | 0.0004 | 0.0005 | 0.0007 | 0.0010 | 0.0012 | 0.0013 |
| Average | 0.2503 | 0.5192 | 0.0001 | 0.0001 | 0.0002 | 0.0002 | 0.0004 | 0.0005 | 0.0008 | 0.0010 | 0.0012 | 0.0014 |
| Median | 0.2506 | 0.5193 | 0.0001 | 0.0001 | 0.0002 | 0.0003 | 0.0004 | 0.0005 | 0.0008 | 0.0010 | 0.0012 | 0.0014 |
| Std.dev | 0.0008 | 0.0011 | 0.0000 | 0.0000 | 0.0001 | 0.0001 | 0.0001 | 0.0001 | 0.0001 | 0.0001 | 0.0002 | 0.0002 |
| Max | 0.2515 | 0.5207 | 0.0002 | 0.0002 | 0.0003 | 0.0004 | 0.0005 | 0.0008 | 0.0011 | 0.0013 | 0.0016 | 0.0018 |
| Min | 0.2489 | 0.5177 | 0.0001 | 0.0001 | 0.0001 | 0.0001 | 0.0002 | 0.0002 | 0.0005 | 0.0007 | 0.0009 | 0.0010 |

| Sample Number (6500K) | Chromaticity Shift (Δu'v') | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 0hr (Initial) | | 1000hrs | 2000hrs | 3000hrs | 4000hrs | 5000hrs | 6000hrs | 7000hrs | 8000hrs | 9000hrs | 10000hrs |
| S01 | 0.1926 | 0.4562 | 0.0002 | 0.0003 | 0.0003 | 0.0003 | 0.0005 | 0.0009 | 0.0011 | 0.0013 | 0.0015 | 0.0018 |
| S02 | 0.1916 | 0.4559 | 0.0002 | 0.0002 | 0.0004 | 0.0004 | 0.0005 | 0.0006 | 0.0009 | 0.0011 | 0.0013 | 0.0015 |
| S03 | 0.1905 | 0.4584 | 0.0003 | 0.0003 | 0.0003 | 0.0003 | 0.0004 | 0.0005 | 0.0007 | 0.0009 | 0.0012 | 0.0014 |
| S04 | 0.1903 | 0.4581 | 0.0003 | 0.0002 | 0.0004 | 0.0005 | 0.0006 | 0.0007 | 0.0009 | 0.0011 | 0.0014 | 0.0015 |
| S05 | 0.1901 | 0.4584 | 0.0002 | 0.0003 | 0.0004 | 0.0004 | 0.0006 | 0.0006 | 0.0008 | 0.0010 | 0.0012 | 0.0014 |
| S06 | 0.1907 | 0.4586 | 0.0002 | 0.0003 | 0.0003 | 0.0004 | 0.0005 | 0.0003 | 0.0006 | 0.0008 | 0.0010 | 0.0011 |
| S07 | 0.1910 | 0.4586 | 0.0002 | 0.0002 | 0.0004 | 0.0004 | 0.0005 | 0.0005 | 0.0007 | 0.0010 | 0.0012 | 0.0014 |
| S08 | 0.1904 | 0.4583 | 0.0002 | 0.0003 | 0.0002 | 0.0002 | 0.0004 | 0.0006 | 0.0008 | 0.0011 | 0.0013 | 0.0015 |
| S09 | 0.1904 | 0.4581 | 0.0002 | 0.0002 | 0.0003 | 0.0003 | 0.0004 | 0.0007 | 0.0010 | 0.0012 | 0.0014 | 0.0017 |
| S10 | 0.1906 | 0.4584 | 0.0002 | 0.0002 | 0.0003 | 0.0004 | 0.0005 | 0.0007 | 0.0010 | 0.0012 | 0.0014 | 0.0017 |
| S11 | 0.1925 | 0.4575 | 0.0002 | 0.0003 | 0.0002 | 0.0002 | 0.0004 | 0.0006 | 0.0009 | 0.0011 | 0.0013 | 0.0015 |
| S12 | 0.1919 | 0.4569 | 0.0003 | 0.0003 | 0.0002 | 0.0002 | 0.0004 | 0.0008 | 0.0010 | 0.0012 | 0.0015 | 0.0017 |
| S13 | 0.1922 | 0.4574 | 0.0003 | 0.0003 | 0.0002 | 0.0002 | 0.0004 | 0.0005 | 0.0007 | 0.0009 | 0.0011 | 0.0012 |
| S14 | 0.1914 | 0.4571 | 0.0003 | 0.0003 | 0.0003 | 0.0004 | 0.0005 | 0.0006 | 0.0008 | 0.0011 | 0.0013 | 0.0014 |
| S15 | 0.1921 | 0.4559 | 0.0002 | 0.0002 | 0.0004 | 0.0004 | 0.0005 | 0.0006 | 0.0009 | 0.0011 | 0.0014 | 0.0015 |
| S16 | 0.1921 | 0.4558 | 0.0002 | 0.0002 | 0.0004 | 0.0004 | 0.0005 | 0.0004 | 0.0006 | 0.0008 | 0.0010 | 0.0012 |
| S17 | 0.1918 | 0.4556 | 0.0002 | 0.0003 | 0.0003 | 0.0003 | 0.0005 | 0.0006 | 0.0009 | 0.0011 | 0.0014 | 0.0015 |
| S18 | 0.1920 | 0.4557 | 0.0002 | 0.0003 | 0.0003 | 0.0003 | 0.0004 | 0.0009 | 0.0012 | 0.0014 | 0.0017 | 0.0019 |
| S19 | 0.1917 | 0.4558 | 0.0003 | 0.0002 | 0.0004 | 0.0005 | 0.0006 | 0.0006 | 0.0009 | 0.0011 | 0.0014 | 0.0016 |
| S20 | 0.1921 | 0.4560 | 0.0002 | 0.0002 | 0.0003 | 0.0004 | 0.0005 | 0.0006 | 0.0009 | 0.0011 | 0.0013 | 0.0014 |
| S21 | 0.1923 | 0.4562 | 0.0002 | 0.0002 | 0.0003 | 0.0004 | 0.0005 | 0.0006 | 0.0009 | 0.0011 | 0.0014 | 0.0016 |
| S22 | 0.1921 | 0.4558 | 0.0002 | 0.0002 | 0.0003 | 0.0003 | 0.0005 | 0.0006 | 0.0008 | 0.0011 | 0.0013 | 0.0014 |
| S23 | 0.1904 | 0.4582 | 0.0002 | 0.0002 | 0.0003 | 0.0003 | 0.0004 | 0.0008 | 0.0010 | 0.0012 | 0.0015 | 0.0016 |
| S24 | 0.1900 | 0.4583 | 0.0003 | 0.0003 | 0.0002 | 0.0002 | 0.0003 | 0.0006 | 0.0008 | 0.0010 | 0.0013 | 0.0015 |
| S25 | 0.1919 | 0.4572 | 0.0002 | 0.0002 | 0.0004 | 0.0005 | 0.0006 | 0.0005 | 0.0007 | 0.0009 | 0.0012 | 0.0014 |
| Average | 0.1914 | 0.4571 | 0.0002 | 0.0002 | 0.0003 | 0.0003 | 0.0005 | 0.0006 | 0.0009 | 0.0011 | 0.0013 | 0.0015 |
| Median | 0.1917 | 0.4572 | 0.0002 | 0.0002 | 0.0003 | 0.0004 | 0.0005 | 0.0006 | 0.0009 | 0.0011 | 0.0013 | 0.0015 |
| Std.dev | 0.0008 | 0.0011 | 0.0000 | 0.0000 | 0.0001 | 0.0001 | 0.0001 | 0.0001 | 0.0001 | 0.0001 | 0.0002 | 0.0002 |
| Max | 0.1926 | 0.4586 | 0.0003 | 0.0003 | 0.0004 | 0.0005 | 0.0006 | 0.0009 | 0.0012 | 0.0014 | 0.0017 | 0.0019 |
| Min | 0.1900 | 0.4556 | 0.0002 | 0.0002 | 0.0002 | 0.0002 | 0.0003 | 0.0003 | 0.0006 | 0.0008 | 0.0010 | 0.0011 |

### 3.2.4 Data Set 2, 85°C,60mA (Lumen Maintenance)

| Sample Number (2700K) | Φ(lm) | Lumen Maintenance (%) | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | 0hr (Initial) | 1000hrs | 2000hrs | 3000hrs | 4000hrs | 5000hrs | 6000hrs | 7000hrs | 8000hrs | 9000hrs | 10000hrs |
| S01 | 23.17 | 100.01 | 99.79 | 99.58 | 99.36 | 99.16 | 98.96 | 98.79 | 98.62 | 98.45 | 98.20 |
| S02 | 22.04 | 99.98 | 99.77 | 99.57 | 99.35 | 99.09 | 98.84 | 98.67 | 98.46 | 98.24 | 98.08 |
| S03 | 22.53 | 100.03 | 99.83 | 99.63 | 99.38 | 99.18 | 98.96 | 98.74 | 98.56 | 98.35 | 98.10 |
| S04 | 24.87 | 99.99 | 99.80 | 99.58 | 99.33 | 99.08 | 98.85 | 98.68 | 98.51 | 98.34 | 98.18 |
| S05 | 23.37 | 100.01 | 99.81 | 99.60 | 99.37 | 99.12 | 98.92 | 98.70 | 98.49 | 98.32 | 98.07 |
| S06 | 25.18 | 100.01 | 99.81 | 99.62 | 99.39 | 99.17 | 98.97 | 98.80 | 98.63 | 98.46 | 98.21 |
| S07 | 24.12 | 99.98 | 99.79 | 99.59 | 99.37 | 99.11 | 98.91 | 98.74 | 98.57 | 98.35 | 98.19 |
| S08 | 23.98 | 100.02 | 99.81 | 99.60 | 99.35 | 99.15 | 98.95 | 98.77 | 98.55 | 98.38 | 98.14 |
| S09 | 22.81 | 100.02 | 99.83 | 99.63 | 99.38 | 99.18 | 98.98 | 98.76 | 98.54 | 98.37 | 98.12 |
| S10 | 22.90 | 100.01 | 99.81 | 99.61 | 99.41 | 99.22 | 98.96 | 98.78 | 98.62 | 98.40 | 98.16 |
| S11 | 25.62 | 100.01 | 99.81 | 99.60 | 99.38 | 99.15 | 98.93 | 98.71 | 98.55 | 98.38 | 98.13 |
| S12 | 21.02 | 100.00 | 99.79 | 99.57 | 99.35 | 99.13 | 98.90 | 98.73 | 98.56 | 98.34 | 98.10 |
| S13 | 23.26 | 100.01 | 99.82 | 99.62 | 99.40 | 99.18 | 98.98 | 98.80 | 98.62 | 98.41 | 98.16 |
| S14 | 24.34 | 99.98 | 99.79 | 99.59 | 99.39 | 99.19 | 98.99 | 98.82 | 98.60 | 98.43 | 98.27 |
| S15 | 24.81 | 100.00 | 99.78 | 99.57 | 99.35 | 99.12 | 98.92 | 98.75 | 98.53 | 98.31 | 98.07 |
| S16 | 23.86 | 100.02 | 99.81 | 99.60 | 99.37 | 99.12 | 98.87 | 98.65 | 98.47 | 98.25 | 98.01 |
| S17 | 21.28 | 100.01 | 99.82 | 99.62 | 99.37 | 99.14 | 98.89 | 98.72 | 98.50 | 98.34 | 98.18 |
| S18 | 21.20 | 99.99 | 99.78 | 99.58 | 99.38 | 99.13 | 98.90 | 98.73 | 98.56 | 98.38 | 98.22 |
| S19 | 24.20 | 100.02 | 99.81 | 99.60 | 99.40 | 99.20 | 98.97 | 98.76 | 98.58 | 98.41 | 98.17 |
| S20 | 24.76 | 100.00 | 99.78 | 99.57 | 99.35 | 99.12 | 98.87 | 98.70 | 98.52 | 98.36 | 98.20 |
| S21 | 25.47 | 100.00 | 99.79 | 99.59 | 99.39 | 99.19 | 98.99 | 98.83 | 98.61 | 98.43 | 98.19 |
| S22 | 23.06 | 99.99 | 99.78 | 99.57 | 99.37 | 99.17 | 98.97 | 98.79 | 98.57 | 98.36 | 98.11 |
| S23 | 23.96 | 100.03 | 99.83 | 99.62 | 99.42 | 99.20 | 99.00 | 98.83 | 98.61 | 98.44 | 98.29 |
| S24 | 25.32 | 99.99 | 99.78 | 99.58 | 99.38 | 99.13 | 98.93 | 98.71 | 98.54 | 98.36 | 98.11 |
| S25 | 23.27 | 100.03 | 99.90 | 99.23 | 99.04 | 98.84 | 98.63 | 98.41 | 98.24 | 98.08 | 97.93 |
| Average | 23.62 | 100.01 | 99.80 | 99.58 | 99.36 | 99.14 | 98.92 | 98.73 | 98.54 | 98.36 | 98.14 |
| Median | 23.86 | 100.01 | 99.81 | 99.59 | 99.37 | 99.15 | 98.93 | 98.74 | 98.56 | 98.36 | 98.16 |
| Std.dev | 1.30 | 0.02 | 0.03 | 0.07 | 0.07 | 0.07 | 0.07 | 0.08 | 0.08 | 0.08 | 0.08 |
| Max | 25.62 | 100.03 | 99.90 | 99.63 | 99.42 | 99.22 | 99.00 | 98.83 | 98.63 | 98.46 | 98.29 |
| Min | 21.02 | 99.98 | 99.77 | 99.23 | 99.04 | 98.84 | 98.63 | 98.41 | 98.24 | 98.08 | 97.93 |

| Sample Number (3000K) | Φ(lm) | Lumen Maintenance (%) | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | 0hr (Initial) | 1000hrs | 2000hrs | 3000hrs | 4000hrs | 5000hrs | 6000hrs | 7000hrs | 8000hrs | 9000hrs | 10000hrs |
| S01 | 24.78 | 100.05 | 99.85 | 99.65 | 99.40 | 99.20 | 98.98 | 98.76 | 98.58 | 98.37 | 98.12 |
| S02 | 27.12 | 100.01 | 99.82 | 99.60 | 99.35 | 99.10 | 98.87 | 98.70 | 98.53 | 98.36 | 98.20 |
| S03 | 25.62 | 100.03 | 99.83 | 99.62 | 99.39 | 99.14 | 98.94 | 98.72 | 98.51 | 98.34 | 98.09 |
| S04 | 27.43 | 100.03 | 99.83 | 99.64 | 99.41 | 99.19 | 98.99 | 98.82 | 98.65 | 98.48 | 98.23 |
| S05 | 26.37 | 100.00 | 99.81 | 99.61 | 99.39 | 99.13 | 98.93 | 98.76 | 98.59 | 98.37 | 98.21 |
| S06 | 26.23 | 100.04 | 99.83 | 99.62 | 99.37 | 99.17 | 98.97 | 98.79 | 98.57 | 98.40 | 98.16 |
| S07 | 25.06 | 100.04 | 99.85 | 99.65 | 99.40 | 99.20 | 99.00 | 98.78 | 98.56 | 98.39 | 98.14 |
| S08 | 25.15 | 100.03 | 99.83 | 99.63 | 99.43 | 99.24 | 98.98 | 98.80 | 98.64 | 98.42 | 98.18 |
| S09 | 27.87 | 100.03 | 99.83 | 99.62 | 99.40 | 99.17 | 98.95 | 98.73 | 98.57 | 98.40 | 98.15 |
| S10 | 23.27 | 100.02 | 99.81 | 99.59 | 99.37 | 99.15 | 98.92 | 98.75 | 98.58 | 98.36 | 98.12 |
| S11 | 25.51 | 100.03 | 99.84 | 99.64 | 99.42 | 99.20 | 99.00 | 98.82 | 98.64 | 98.43 | 98.18 |
| S12 | 26.59 | 100.00 | 99.81 | 99.61 | 99.41 | 99.21 | 99.01 | 98.84 | 98.62 | 98.45 | 98.29 |
| S13 | 27.06 | 100.02 | 99.80 | 99.59 | 99.37 | 99.14 | 98.94 | 98.77 | 98.55 | 98.33 | 98.09 |
| S14 | 26.45 | 100.04 | 99.83 | 99.62 | 99.42 | 99.22 | 98.99 | 98.78 | 98.60 | 98.43 | 98.19 |
| S15 | 27.01 | 100.02 | 99.80 | 99.59 | 99.37 | 99.14 | 98.89 | 98.72 | 98.54 | 98.38 | 98.22 |
| S16 | 27.72 | 100.02 | 99.81 | 99.61 | 99.41 | 99.21 | 99.01 | 98.85 | 98.63 | 98.45 | 98.21 |
| S17 | 25.31 | 100.01 | 99.80 | 99.59 | 99.39 | 99.19 | 98.99 | 98.81 | 98.59 | 98.38 | 98.13 |
| S18 | 26.21 | 100.05 | 99.85 | 99.64 | 99.44 | 99.22 | 99.02 | 98.85 | 98.63 | 98.46 | 98.31 |
| S19 | 27.57 | 100.01 | 99.80 | 99.60 | 99.40 | 99.15 | 98.95 | 98.73 | 98.56 | 98.38 | 98.13 |
| S20 | 25.52 | 100.05 | 99.92 | 99.25 | 99.06 | 98.86 | 98.65 | 98.43 | 98.26 | 98.10 | 97.95 |
| S21 | 26.11 | 100.04 | 99.83 | 99.62 | 99.39 | 99.14 | 98.89 | 98.67 | 98.49 | 98.27 | 98.03 |
| S22 | 23.53 | 100.03 | 99.84 | 99.64 | 99.39 | 99.16 | 98.91 | 98.74 | 98.52 | 98.36 | 98.20 |
| S23 | 23.45 | 100.01 | 99.80 | 99.60 | 99.40 | 99.15 | 98.92 | 98.75 | 98.58 | 98.40 | 98.24 |
| S24 | 25.42 | 100.03 | 99.81 | 99.60 | 99.38 | 99.18 | 98.98 | 98.81 | 98.64 | 98.47 | 98.22 |
| S25 | 24.29 | 100.00 | 99.79 | 99.59 | 99.37 | 99.11 | 98.86 | 98.69 | 98.48 | 98.26 | 98.10 |
| Average | 25.87 | 100.03 | 99.82 | 99.60 | 99.38 | 99.16 | 98.94 | 98.75 | 98.56 | 98.38 | 98.16 |
| Median | 26.11 | 100.03 | 99.83 | 99.61 | 99.39 | 99.17 | 98.95 | 98.76 | 98.58 | 98.38 | 98.18 |
| Std.dev | 1.30 | 0.02 | 0.03 | 0.07 | 0.07 | 0.07 | 0.07 | 0.08 | 0.08 | 0.08 | 0.08 |
| Max | 27.87 | 100.05 | 99.92 | 99.65 | 99.44 | 99.24 | 99.02 | 98.85 | 98.65 | 98.48 | 98.31 |
| Min | 23.27 | 100.00 | 99.79 | 99.25 | 99.06 | 98.86 | 98.65 | 98.43 | 98.26 | 98.10 | 97.95 |

| Sample Number (6500K) | Φ(lm) | Lumen Maintenance (%) | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | 0hr (Initial) | 1000hrs | 2000hrs | 3000hrs | 4000hrs | 5000hrs | 6000hrs | 7000hrs | 8000hrs | 9000hrs | 10000hrs |
| **S01** | 29.47 | 100.07 | 99.85 | 99.64 | 99.42 | 99.19 | 98.99 | 98.82 | 98.60 | 98.38 | 98.14 |
| **S02** | 28.52 | 100.09 | 99.88 | 99.67 | 99.44 | 99.19 | 98.94 | 98.72 | 98.54 | 98.32 | 98.08 |
| **S03** | 25.94 | 100.08 | 99.89 | 99.69 | 99.44 | 99.21 | 98.96 | 98.79 | 98.57 | 98.41 | 98.25 |
| **S04** | 25.86 | 100.06 | 99.85 | 99.65 | 99.45 | 99.20 | 98.97 | 98.80 | 98.63 | 98.45 | 98.29 |
| **S05** | 28.86 | 100.09 | 99.88 | 99.67 | 99.47 | 99.27 | 99.04 | 98.83 | 98.65 | 98.48 | 98.24 |
| **S06** | 29.42 | 100.07 | 99.85 | 99.64 | 99.42 | 99.19 | 98.94 | 98.77 | 98.59 | 98.43 | 98.27 |
| **S07** | 30.13 | 100.07 | 99.86 | 99.66 | 99.46 | 99.26 | 99.06 | 98.90 | 98.68 | 98.50 | 98.26 |
| **S08** | 27.72 | 100.06 | 99.85 | 99.64 | 99.44 | 99.24 | 99.04 | 98.86 | 98.64 | 98.43 | 98.18 |
| **S09** | 28.62 | 100.10 | 99.90 | 99.69 | 99.49 | 99.27 | 99.07 | 98.90 | 98.68 | 98.51 | 98.36 |
| **S10** | 27.19 | 100.10 | 99.90 | 99.70 | 99.45 | 99.25 | 99.03 | 98.81 | 98.63 | 98.42 | 98.17 |
| **S11** | 29.53 | 100.06 | 99.87 | 99.65 | 99.40 | 99.15 | 98.92 | 98.75 | 98.58 | 98.41 | 98.25 |
| **S12** | 28.03 | 100.08 | 99.88 | 99.67 | 99.44 | 99.19 | 98.99 | 98.77 | 98.56 | 98.39 | 98.14 |
| **S13** | 29.84 | 100.08 | 99.88 | 99.69 | 99.46 | 99.24 | 99.04 | 98.87 | 98.70 | 98.53 | 98.28 |
| **S14** | 28.78 | 100.05 | 99.86 | 99.66 | 99.44 | 99.18 | 98.98 | 98.81 | 98.64 | 98.42 | 98.26 |
| **S15** | 28.64 | 100.09 | 99.88 | 99.67 | 99.42 | 99.22 | 99.02 | 98.84 | 98.62 | 98.45 | 98.21 |
| **S16** | 27.47 | 100.09 | 99.90 | 99.70 | 99.45 | 99.25 | 99.05 | 98.83 | 98.61 | 98.44 | 98.19 |
| **S17** | 27.56 | 100.08 | 99.88 | 99.68 | 99.48 | 99.29 | 99.03 | 98.85 | 98.69 | 98.47 | 98.23 |
| **S18** | 30.28 | 100.08 | 99.88 | 99.67 | 99.45 | 99.22 | 99.00 | 98.78 | 98.62 | 98.45 | 98.20 |
| **S19** | 29.98 | 100.06 | 99.85 | 99.65 | 99.45 | 99.20 | 99.00 | 98.78 | 98.61 | 98.43 | 98.18 |
| **S20** | 27.93 | 100.10 | 99.97 | 99.30 | 99.11 | 98.91 | 98.70 | 98.48 | 98.31 | 98.15 | 98.00 |
| **S21** | 25.68 | 100.07 | 99.86 | 99.64 | 99.42 | 99.20 | 98.97 | 98.80 | 98.63 | 98.41 | 98.17 |
| **S22** | 27.92 | 100.08 | 99.89 | 99.69 | 99.47 | 99.25 | 99.05 | 98.87 | 98.69 | 98.48 | 98.23 |
| **S23** | 29.00 | 100.05 | 99.86 | 99.66 | 99.46 | 99.26 | 99.06 | 98.89 | 98.67 | 98.50 | 98.34 |
| **S24** | 27.83 | 100.08 | 99.86 | 99.65 | 99.43 | 99.23 | 99.03 | 98.86 | 98.69 | 98.52 | 98.27 |
| **S25** | 26.70 | 100.05 | 99.84 | 99.64 | 99.42 | 99.16 | 98.91 | 98.74 | 98.53 | 98.31 | 98.15 |
| **Average** | 28.28 | 100.08 | 99.87 | 99.65 | 99.43 | 99.21 | 98.99 | 98.80 | 98.61 | 98.43 | 98.21 |
| **Median** | 28.52 | 100.08 | 99.88 | 99.66 | 99.44 | 99.22 | 99.00 | 98.81 | 98.63 | 98.43 | 98.23 |
| **Std.dev** | 1.30 | 0.02 | 0.03 | 0.07 | 0.07 | 0.07 | 0.07 | 0.08 | 0.08 | 0.08 | 0.08 |
| **Max** | 30.28 | 100.10 | 99.97 | 99.70 | 99.49 | 99.29 | 99.07 | 98.90 | 98.70 | 98.53 | 98.36 |
| **Min** | 25.68 | 100.05 | 99.84 | 99.30 | 99.11 | 98.91 | 98.70 | 98.48 | 98.31 | 98.15 | 98.00 |

### 3.2.5 Data Set 2, 85°C,60mA (Forward Voltage)

| Sample Number (2700K) | Forward Voltage(V) | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | 0hr (Initial) | 1000hrs | 2000hrs | 3000hrs | 4000hrs | 5000hrs | 6000hrs | 7000hrs | 8000hrs | 9000hrs | 10000hrs |
| S01 | 2.86 | 2.84 | 2.86 | 2.87 | 2.88 | 2.88 | 2.86 | 2.87 | 2.87 | 2.86 | 2.88 |
| S02 | 2.90 | 2.91 | 2.92 | 2.92 | 2.90 | 2.90 | 2.91 | 2.93 | 2.90 | 2.90 | 2.92 |
| S03 | 2.89 | 2.91 | 2.91 | 2.88 | 2.89 | 2.92 | 2.90 | 2.89 | 2.91 | 2.90 | 2.91 |
| S04 | 2.85 | 2.87 | 2.87 | 2.86 | 2.87 | 2.85 | 2.87 | 2.87 | 2.87 | 2.87 | 2.87 |
| S05 | 2.87 | 2.89 | 2.90 | 2.89 | 2.89 | 2.88 | 2.87 | 2.89 | 2.89 | 2.89 | 2.87 |
| S06 | 2.85 | 2.84 | 2.83 | 2.87 | 2.85 | 2.85 | 2.86 | 2.86 | 2.86 | 2.85 | 2.87 |
| S07 | 2.93 | 2.95 | 2.95 | 2.95 | 2.94 | 2.93 | 2.96 | 2.93 | 2.95 | 2.95 | 2.96 |
| S08 | 2.86 | 2.88 | 2.86 | 2.87 | 2.86 | 2.87 | 2.88 | 2.87 | 2.88 | 2.88 | 2.85 |
| S09 | 2.93 | 2.95 | 2.95 | 2.95 | 2.92 | 2.95 | 2.94 | 2.93 | 2.95 | 2.92 | 2.94 |
| S10 | 2.87 | 2.88 | 2.88 | 2.88 | 2.87 | 2.89 | 2.89 | 2.87 | 2.88 | 2.88 | 2.88 |
| S11 | 2.89 | 2.90 | 2.90 | 2.88 | 2.90 | 2.88 | 2.89 | 2.89 | 2.90 | 2.90 | 2.90 |
| S12 | 2.88 | 2.89 | 2.88 | 2.88 | 2.89 | 2.90 | 2.86 | 2.90 | 2.90 | 2.87 | 2.90 |
| S13 | 2.89 | 2.89 | 2.91 | 2.91 | 2.92 | 2.90 | 2.90 | 2.89 | 2.91 | 2.91 | 2.88 |
| S14 | 2.90 | 2.89 | 2.92 | 2.92 | 2.92 | 2.92 | 2.90 | 2.90 | 2.93 | 2.92 | 2.92 |
| S15 | 2.90 | 2.91 | 2.90 | 2.89 | 2.90 | 2.92 | 2.90 | 2.90 | 2.90 | 2.92 | 2.89 |
| S16 | 2.93 | 2.92 | 2.95 | 2.93 | 2.95 | 2.92 | 2.94 | 2.93 | 2.92 | 2.92 | 2.93 |
| S17 | 2.91 | 2.91 | 2.92 | 2.93 | 2.92 | 2.93 | 2.93 | 2.92 | 2.93 | 2.91 | 2.90 |
| S18 | 2.90 | 2.92 | 2.91 | 2.92 | 2.90 | 2.91 | 2.92 | 2.91 | 2.91 | 2.92 | 2.91 |
| S19 | 2.93 | 2.94 | 2.94 | 2.93 | 2.93 | 2.95 | 2.93 | 2.93 | 2.94 | 2.93 | 2.95 |
| S20 | 2.87 | 2.88 | 2.88 | 2.88 | 2.89 | 2.88 | 2.88 | 2.88 | 2.89 | 2.88 | 2.88 |
| S21 | 2.92 | 2.93 | 2.94 | 2.92 | 2.94 | 2.92 | 2.92 | 2.95 | 2.92 | 2.93 | 2.94 |
| S22 | 2.85 | 2.85 | 2.87 | 2.85 | 2.85 | 2.86 | 2.87 | 2.87 | 2.85 | 2.84 | 2.85 |
| S23 | 2.86 | 2.87 | 2.85 | 2.87 | 2.88 | 2.88 | 2.84 | 2.86 | 2.86 | 2.87 | 2.86 |
| S24 | 2.92 | 2.92 | 2.94 | 2.92 | 2.93 | 2.92 | 2.95 | 2.94 | 2.94 | 2.94 | 2.94 |
| S25 | 2.84 | 2.84 | 2.82 | 2.84 | 2.84 | 2.83 | 2.82 | 2.84 | 2.84 | 2.85 | 2.84 |
| Average | 2.89 | 2.90 | 2.90 | 2.90 | 2.90 | 2.90 | 2.90 | 2.90 | 2.90 | 2.90 | 2.90 |
| Median | 2.89 | 2.89 | 2.90 | 2.89 | 2.90 | 2.90 | 2.90 | 2.89 | 2.90 | 2.90 | 2.90 |
| Std.dev | 0.03 | 0.03 | 0.04 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 |
| Max | 2.93 | 2.95 | 2.95 | 2.95 | 2.95 | 2.95 | 2.96 | 2.95 | 2.95 | 2.95 | 2.96 |
| Min | 2.84 | 2.84 | 2.82 | 2.84 | 2.84 | 2.83 | 2.82 | 2.84 | 2.84 | 2.84 | 2.84 |

| Sample Number (4000K) | Forward Voltage(V) | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | 0hr (Initial) | 1000hrs | 2000hrs | 3000hrs | 4000hrs | 5000hrs | 6000hrs | 7000hrs | 8000hrs | 9000hrs | 10000hrs |
| **S01** | 2.93 | 2.94 | 2.94 | 2.94 | 2.93 | 2.95 | 2.95 | 2.93 | 2.94 | 2.94 | 2.94 |
| **S02** | 2.95 | 2.96 | 2.96 | 2.94 | 2.96 | 2.94 | 2.95 | 2.95 | 2.96 | 2.96 | 2.96 |
| **S03** | 2.94 | 2.95 | 2.94 | 2.94 | 2.95 | 2.96 | 2.92 | 2.96 | 2.96 | 2.93 | 2.96 |
| **S04** | 2.95 | 2.95 | 2.97 | 2.97 | 2.98 | 2.96 | 2.96 | 2.95 | 2.97 | 2.97 | 2.94 |
| **S05** | 2.96 | 2.95 | 2.98 | 2.98 | 2.98 | 2.98 | 2.96 | 2.96 | 2.99 | 2.98 | 2.98 |
| **S06** | 2.96 | 2.97 | 2.96 | 2.95 | 2.96 | 2.98 | 2.96 | 2.96 | 2.96 | 2.98 | 2.95 |
| **S07** | 2.99 | 2.98 | 3.01 | 2.99 | 3.01 | 2.98 | 3.00 | 2.99 | 2.98 | 2.98 | 2.99 |
| **S08** | 2.97 | 2.97 | 2.98 | 2.99 | 2.98 | 2.99 | 2.99 | 2.98 | 2.99 | 2.97 | 2.96 |
| **S09** | 2.96 | 2.98 | 2.97 | 2.98 | 2.96 | 2.97 | 2.98 | 2.97 | 2.97 | 2.98 | 2.97 |
| **S10** | 2.99 | 3.00 | 3.00 | 2.99 | 2.99 | 3.01 | 2.99 | 2.99 | 3.00 | 2.99 | 3.01 |
| **S11** | 2.93 | 2.94 | 2.94 | 2.94 | 2.95 | 2.94 | 2.94 | 2.94 | 2.95 | 2.94 | 2.94 |
| **S12** | 2.98 | 2.99 | 3.00 | 2.98 | 3.00 | 2.98 | 2.98 | 3.01 | 2.98 | 2.99 | 3.00 |
| **S13** | 2.91 | 2.91 | 2.93 | 2.91 | 2.91 | 2.92 | 2.93 | 2.93 | 2.91 | 2.90 | 2.91 |
| **S14** | 2.92 | 2.93 | 2.91 | 2.93 | 2.94 | 2.94 | 2.90 | 2.92 | 2.92 | 2.93 | 2.92 |
| **S15** | 2.98 | 2.98 | 3.00 | 2.98 | 2.99 | 2.98 | 3.01 | 3.00 | 3.00 | 3.00 | 3.00 |
| **S16** | 2.90 | 2.90 | 2.88 | 2.90 | 2.90 | 2.89 | 2.88 | 2.90 | 2.90 | 2.91 | 2.90 |
| **S17** | 2.92 | 2.90 | 2.92 | 2.93 | 2.94 | 2.94 | 2.92 | 2.93 | 2.93 | 2.92 | 2.94 |
| **S18** | 2.96 | 2.97 | 2.98 | 2.98 | 2.96 | 2.96 | 2.97 | 2.99 | 2.96 | 2.96 | 2.98 |
| **S19** | 2.95 | 2.97 | 2.97 | 2.94 | 2.95 | 2.98 | 2.96 | 2.95 | 2.97 | 2.96 | 2.97 |
| **S20** | 2.91 | 2.93 | 2.93 | 2.92 | 2.93 | 2.91 | 2.93 | 2.93 | 2.93 | 2.93 | 2.93 |
| **S21** | 2.93 | 2.95 | 2.96 | 2.95 | 2.95 | 2.94 | 2.93 | 2.95 | 2.95 | 2.95 | 2.93 |
| **S22** | 2.91 | 2.90 | 2.89 | 2.93 | 2.91 | 2.91 | 2.92 | 2.92 | 2.92 | 2.91 | 2.93 |
| **S23** | 2.99 | 3.01 | 3.01 | 3.01 | 3.00 | 2.99 | 3.02 | 2.99 | 3.01 | 3.01 | 3.02 |
| **S24** | 2.92 | 2.94 | 2.92 | 2.93 | 2.92 | 2.93 | 2.94 | 2.93 | 2.94 | 2.94 | 2.91 |
| **S25** | 2.99 | 3.01 | 3.01 | 3.01 | 2.98 | 3.01 | 3.00 | 2.99 | 3.01 | 2.98 | 3.00 |
| **Average** | 2.95 | 2.96 | 2.96 | 2.96 | 2.96 | 2.96 | 2.96 | 2.96 | 2.96 | 2.96 | 2.96 |
| **Median** | 2.95 | 2.95 | 2.96 | 2.95 | 2.96 | 2.96 | 2.96 | 2.95 | 2.96 | 2.96 | 2.96 |
| **Std.dev** | 0.03 | 0.03 | 0.04 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 |
| **Max** | 2.99 | 3.01 | 3.01 | 3.01 | 3.01 | 3.01 | 3.02 | 3.01 | 3.01 | 3.01 | 3.02 |
| **Min** | 2.90 | 2.90 | 2.88 | 2.90 | 2.90 | 2.89 | 2.88 | 2.90 | 2.90 | 2.90 | 2.90 |

| Sample Number (6500K) | Forward Voltage(V) | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | 0hr (Initial) | 1000hrs | 2000hrs | 3000hrs | 4000hrs | 5000hrs | 6000hrs | 7000hrs | 8000hrs | 9000hrs | 10000hrs |
| **S01** | 2.97 | 2.99 | 3.00 | 2.99 | 2.99 | 2.98 | 2.97 | 2.99 | 2.99 | 2.99 | 2.97 |
| **S02** | 2.95 | 2.94 | 2.93 | 2.97 | 2.95 | 2.95 | 2.96 | 2.96 | 2.96 | 2.95 | 2.97 |
| **S03** | 3.03 | 3.05 | 3.05 | 3.05 | 3.04 | 3.03 | 3.06 | 3.03 | 3.05 | 3.05 | 3.06 |
| **S04** | 2.96 | 2.98 | 2.96 | 2.97 | 2.96 | 2.97 | 2.98 | 2.97 | 2.98 | 2.98 | 2.95 |
| **S05** | 3.03 | 3.05 | 3.05 | 3.05 | 3.02 | 3.05 | 3.04 | 3.03 | 3.05 | 3.02 | 3.04 |
| **S06** | 2.97 | 2.98 | 2.98 | 2.98 | 2.97 | 2.99 | 2.99 | 2.97 | 2.98 | 2.98 | 2.98 |
| **S07** | 2.99 | 3.00 | 3.00 | 2.98 | 3.00 | 2.98 | 2.99 | 2.99 | 3.00 | 3.00 | 3.00 |
| **S08** | 2.98 | 2.99 | 2.98 | 2.98 | 2.99 | 3.00 | 2.96 | 3.00 | 3.00 | 2.97 | 3.00 |
| **S09** | 2.99 | 2.99 | 3.01 | 3.01 | 3.02 | 3.00 | 3.00 | 2.99 | 3.01 | 3.01 | 2.98 |
| **S10** | 3.00 | 2.99 | 3.02 | 3.02 | 3.02 | 3.02 | 3.00 | 3.00 | 3.03 | 3.02 | 3.02 |
| **S11** | 3.00 | 3.01 | 3.00 | 2.99 | 3.00 | 3.02 | 3.00 | 3.00 | 3.00 | 3.02 | 2.99 |
| **S12** | 3.03 | 3.02 | 3.05 | 3.03 | 3.05 | 3.02 | 3.04 | 3.03 | 3.02 | 3.02 | 3.03 |
| **S13** | 3.01 | 3.01 | 3.02 | 3.03 | 3.02 | 3.03 | 3.03 | 3.02 | 3.03 | 3.01 | 3.00 |
| **S14** | 2.97 | 2.98 | 2.98 | 2.98 | 2.99 | 2.98 | 2.98 | 2.98 | 2.99 | 2.98 | 2.98 |
| **S15** | 3.02 | 3.03 | 3.04 | 3.02 | 3.04 | 3.02 | 3.02 | 3.05 | 3.02 | 3.03 | 3.04 |
| **S16** | 2.95 | 2.95 | 2.97 | 2.95 | 2.95 | 2.96 | 2.97 | 2.97 | 2.95 | 2.94 | 2.95 |
| **S17** | 3.00 | 3.02 | 3.01 | 3.02 | 3.00 | 3.01 | 3.02 | 3.01 | 3.01 | 3.02 | 3.01 |
| **S18** | 3.03 | 3.04 | 3.04 | 3.03 | 3.03 | 3.05 | 3.03 | 3.03 | 3.04 | 3.03 | 3.05 |
| **S19** | 2.96 | 2.97 | 2.95 | 2.97 | 2.98 | 2.98 | 2.94 | 2.96 | 2.96 | 2.97 | 2.96 |
| **S20** | 3.02 | 3.02 | 3.04 | 3.02 | 3.03 | 3.02 | 3.05 | 3.04 | 3.04 | 3.04 | 3.04 |
| **S21** | 2.94 | 2.94 | 2.92 | 2.94 | 2.94 | 2.93 | 2.92 | 2.94 | 2.94 | 2.95 | 2.94 |
| **S22** | 2.95 | 2.97 | 2.97 | 2.96 | 2.97 | 2.95 | 2.97 | 2.97 | 2.97 | 2.97 | 2.97 |
| **S23** | 2.96 | 2.94 | 2.96 | 2.97 | 2.98 | 2.98 | 2.96 | 2.97 | 2.97 | 2.96 | 2.98 |
| **S24** | 3.00 | 3.01 | 3.02 | 3.02 | 3.00 | 3.00 | 3.01 | 3.03 | 3.00 | 3.00 | 3.02 |
| **S25** | 2.99 | 3.01 | 3.01 | 2.98 | 2.99 | 3.02 | 3.00 | 2.99 | 3.01 | 3.00 | 3.01 |
| **Average** | 2.99 | 3.00 | 3.00 | 3.00 | 3.00 | 3.00 | 3.00 | 3.00 | 3.00 | 3.00 | 3.00 |
| **Median** | 2.99 | 2.99 | 3.00 | 2.99 | 3.00 | 3.00 | 3.00 | 2.99 | 3.00 | 3.00 | 3.00 |
| **Std.dev** | 0.03 | 0.03 | 0.04 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 |
| **Max** | 3.03 | 3.05 | 3.05 | 3.05 | 3.05 | 3.05 | 3.06 | 3.05 | 3.05 | 3.05 | 3.06 |
| **Min** | 2.94 | 2.94 | 2.92 | 2.94 | 2.94 | 2.93 | 2.92 | 2.94 | 2.94 | 2.94 | 2.94 |

### 3.2.6 Data Set 2, 85°C,60mA (Chromaticity Shift)

| Sample Number (2700K) | Chromaticity Shift (Δu'v') | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 0hr (Initial) | | 1000hrs | 2000hrs | 3000hrs | 4000hrs | 5000hrs | 6000hrs | 7000hrs | 8000hrs | 9000hrs | 10000hrs |
| S01 | 0.2607 | 0.5255 | 0.0002 | 0.0002 | 0.0003 | 0.0006 | 0.0007 | 0.0008 | 0.0011 | 0.0013 | 0.0015 | 0.0016 |
| S02 | 0.2607 | 0.5254 | 0.0002 | 0.0002 | 0.0003 | 0.0006 | 0.0007 | 0.0008 | 0.0011 | 0.0013 | 0.0016 | 0.0018 |
| S03 | 0.2604 | 0.5252 | 0.0002 | 0.0002 | 0.0003 | 0.0005 | 0.0007 | 0.0008 | 0.0010 | 0.0013 | 0.0015 | 0.0016 |
| S04 | 0.2606 | 0.5253 | 0.0001 | 0.0001 | 0.0003 | 0.0005 | 0.0007 | 0.0011 | 0.0013 | 0.0015 | 0.0017 | 0.0020 |
| S05 | 0.2603 | 0.5254 | 0.0002 | 0.0002 | 0.0004 | 0.0006 | 0.0007 | 0.0008 | 0.0011 | 0.0013 | 0.0015 | 0.0017 |
| S06 | 0.2607 | 0.5256 | 0.0002 | 0.0002 | 0.0004 | 0.0006 | 0.0007 | 0.0006 | 0.0008 | 0.0010 | 0.0012 | 0.0014 |
| S07 | 0.2609 | 0.5258 | 0.0001 | 0.0001 | 0.0003 | 0.0005 | 0.0007 | 0.0008 | 0.0011 | 0.0013 | 0.0016 | 0.0017 |
| S08 | 0.2607 | 0.5254 | 0.0001 | 0.0001 | 0.0003 | 0.0005 | 0.0006 | 0.0011 | 0.0014 | 0.0016 | 0.0019 | 0.0021 |
| S09 | 0.2612 | 0.5258 | 0.0002 | 0.0002 | 0.0003 | 0.0006 | 0.0007 | 0.0009 | 0.0012 | 0.0014 | 0.0016 | 0.0019 |
| S10 | 0.2602 | 0.5255 | 0.0002 | 0.0002 | 0.0003 | 0.0005 | 0.0006 | 0.0010 | 0.0012 | 0.0014 | 0.0017 | 0.0018 |
| S11 | 0.2591 | 0.5280 | 0.0001 | 0.0001 | 0.0002 | 0.0004 | 0.0005 | 0.0008 | 0.0010 | 0.0012 | 0.0015 | 0.0017 |
| S12 | 0.2589 | 0.5277 | 0.0002 | 0.0002 | 0.0004 | 0.0007 | 0.0008 | 0.0007 | 0.0009 | 0.0011 | 0.0014 | 0.0016 |
| S13 | 0.2587 | 0.5280 | 0.0002 | 0.0001 | 0.0002 | 0.0004 | 0.0006 | 0.0008 | 0.0011 | 0.0013 | 0.0015 | 0.0017 |
| S14 | 0.2593 | 0.5282 | 0.0002 | 0.0001 | 0.0002 | 0.0004 | 0.0006 | 0.0010 | 0.0012 | 0.0014 | 0.0017 | 0.0019 |
| S15 | 0.2596 | 0.5282 | 0.0001 | 0.0001 | 0.0002 | 0.0004 | 0.0006 | 0.0007 | 0.0009 | 0.0011 | 0.0013 | 0.0014 |
| S16 | 0.2590 | 0.5279 | 0.0002 | 0.0001 | 0.0003 | 0.0006 | 0.0007 | 0.0008 | 0.0010 | 0.0013 | 0.0015 | 0.0016 |
| S17 | 0.2590 | 0.5277 | 0.0002 | 0.0002 | 0.0004 | 0.0006 | 0.0008 | 0.0008 | 0.0010 | 0.0012 | 0.0014 | 0.0016 |
| S18 | 0.2592 | 0.5280 | 0.0001 | 0.0001 | 0.0003 | 0.0006 | 0.0007 | 0.0005 | 0.0008 | 0.0010 | 0.0012 | 0.0013 |
| S19 | 0.2590 | 0.5278 | 0.0002 | 0.0002 | 0.0004 | 0.0006 | 0.0007 | 0.0007 | 0.0009 | 0.0012 | 0.0014 | 0.0016 |
| S20 | 0.2586 | 0.5279 | 0.0002 | 0.0001 | 0.0002 | 0.0004 | 0.0006 | 0.0008 | 0.0010 | 0.0013 | 0.0015 | 0.0017 |
| S21 | 0.2605 | 0.5268 | 0.0002 | 0.0002 | 0.0003 | 0.0005 | 0.0006 | 0.0009 | 0.0012 | 0.0014 | 0.0016 | 0.0019 |
| S22 | 0.2611 | 0.5271 | 0.0002 | 0.0002 | 0.0004 | 0.0006 | 0.0007 | 0.0008 | 0.0011 | 0.0013 | 0.0016 | 0.0017 |
| S23 | 0.2605 | 0.5265 | 0.0001 | 0.0001 | 0.0003 | 0.0005 | 0.0006 | 0.0007 | 0.0009 | 0.0011 | 0.0014 | 0.0016 |
| S24 | 0.2608 | 0.5270 | 0.0002 | 0.0002 | 0.0004 | 0.0007 | 0.0008 | 0.0009 | 0.0011 | 0.0013 | 0.0016 | 0.0017 |
| S25 | 0.2600 | 0.5267 | 0.0002 | 0.0002 | 0.0004 | 0.0006 | 0.0007 | 0.0008 | 0.0011 | 0.0013 | 0.0016 | 0.0017 |
| Average | 0.2600 | 0.5267 | 0.0002 | 0.0002 | 0.0003 | 0.0005 | 0.0007 | 0.0008 | 0.0011 | 0.0013 | 0.0015 | 0.0017 |
| Median | 0.2603 | 0.5268 | 0.0002 | 0.0002 | 0.0003 | 0.0006 | 0.0007 | 0.0008 | 0.0011 | 0.0013 | 0.0015 | 0.0017 |
| Std.dev | 0.0008 | 0.0011 | 0.0000 | 0.0000 | 0.0001 | 0.0001 | 0.0001 | 0.0001 | 0.0001 | 0.0001 | 0.0002 | 0.0002 |
| Max | 0.2612 | 0.5282 | 0.0002 | 0.0002 | 0.0004 | 0.0007 | 0.0008 | 0.0011 | 0.0014 | 0.0016 | 0.0019 | 0.0021 |
| Min | 0.2586 | 0.5252 | 0.0001 | 0.0001 | 0.0002 | 0.0004 | 0.0005 | 0.0005 | 0.0008 | 0.0010 | 0.0012 | 0.0013 |

| Sample Number (3000K) | Chromaticity Shift (Δu'v') | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 0hr (Initial) | | 1000hrs | 2000hrs | 3000hrs | 4000hrs | 5000hrs | 6000hrs | 7000hrs | 8000hrs | 9000hrs | 10000hrs |
| S01 | 0.2518 | 0.5171 | 0.0002 | 0.0001 | 0.0002 | 0.0002 | 0.0004 | 0.0008 | 0.0010 | 0.0012 | 0.0015 | 0.0017 |
| S02 | 0.2518 | 0.5170 | 0.0001 | 0.0001 | 0.0002 | 0.0002 | 0.0004 | 0.0005 | 0.0007 | 0.0009 | 0.0011 | 0.0012 |
| S03 | 0.2515 | 0.5168 | 0.0002 | 0.0001 | 0.0003 | 0.0004 | 0.0005 | 0.0006 | 0.0008 | 0.0011 | 0.0013 | 0.0014 |
| S04 | 0.2517 | 0.5169 | 0.0002 | 0.0002 | 0.0004 | 0.0004 | 0.0006 | 0.0006 | 0.0008 | 0.0010 | 0.0012 | 0.0014 |
| S05 | 0.2514 | 0.5170 | 0.0001 | 0.0001 | 0.0003 | 0.0004 | 0.0005 | 0.0003 | 0.0006 | 0.0008 | 0.0010 | 0.0011 |
| S06 | 0.2518 | 0.5172 | 0.0002 | 0.0002 | 0.0004 | 0.0004 | 0.0005 | 0.0005 | 0.0007 | 0.0010 | 0.0012 | 0.0014 |
| S07 | 0.2520 | 0.5174 | 0.0002 | 0.0001 | 0.0002 | 0.0002 | 0.0004 | 0.0006 | 0.0008 | 0.0011 | 0.0013 | 0.0015 |
| S08 | 0.2518 | 0.5170 | 0.0001 | 0.0001 | 0.0003 | 0.0003 | 0.0004 | 0.0009 | 0.0012 | 0.0014 | 0.0017 | 0.0019 |
| S09 | 0.2523 | 0.5174 | 0.0002 | 0.0002 | 0.0003 | 0.0004 | 0.0005 | 0.0007 | 0.0010 | 0.0012 | 0.0014 | 0.0017 |
| S10 | 0.2513 | 0.5171 | 0.0002 | 0.0001 | 0.0002 | 0.0002 | 0.0004 | 0.0008 | 0.0010 | 0.0012 | 0.0015 | 0.0017 |
| S11 | 0.2502 | 0.5196 | 0.0001 | 0.0001 | 0.0002 | 0.0002 | 0.0004 | 0.0005 | 0.0007 | 0.0009 | 0.0011 | 0.0012 |
| S12 | 0.2500 | 0.5193 | 0.0002 | 0.0001 | 0.0003 | 0.0004 | 0.0005 | 0.0006 | 0.0008 | 0.0011 | 0.0013 | 0.0014 |
| S13 | 0.2498 | 0.5196 | 0.0001 | 0.0001 | 0.0003 | 0.0004 | 0.0005 | 0.0003 | 0.0006 | 0.0008 | 0.0010 | 0.0014 |
| S14 | 0.2504 | 0.5198 | 0.0002 | 0.0002 | 0.0004 | 0.0004 | 0.0005 | 0.0005 | 0.0007 | 0.0010 | 0.0012 | 0.0011 |
| S15 | 0.2507 | 0.5198 | 0.0002 | 0.0001 | 0.0002 | 0.0002 | 0.0004 | 0.0006 | 0.0008 | 0.0011 | 0.0013 | 0.0014 |
| S16 | 0.2501 | 0.5195 | 0.0002 | 0.0001 | 0.0002 | 0.0002 | 0.0004 | 0.0006 | 0.0008 | 0.0011 | 0.0013 | 0.0015 |
| S17 | 0.2501 | 0.5193 | 0.0002 | 0.0002 | 0.0004 | 0.0004 | 0.0006 | 0.0006 | 0.0008 | 0.0010 | 0.0012 | 0.0014 |
| S18 | 0.2503 | 0.5196 | 0.0001 | 0.0001 | 0.0003 | 0.0004 | 0.0005 | 0.0003 | 0.0006 | 0.0008 | 0.0010 | 0.0011 |
| S19 | 0.2501 | 0.5194 | 0.0002 | 0.0002 | 0.0004 | 0.0004 | 0.0005 | 0.0005 | 0.0007 | 0.0010 | 0.0012 | 0.0014 |
| S20 | 0.2497 | 0.5195 | 0.0002 | 0.0001 | 0.0002 | 0.0002 | 0.0004 | 0.0006 | 0.0008 | 0.0011 | 0.0013 | 0.0015 |
| S21 | 0.2516 | 0.5184 | 0.0002 | 0.0002 | 0.0003 | 0.0003 | 0.0004 | 0.0007 | 0.0010 | 0.0012 | 0.0014 | 0.0017 |
| S22 | 0.2522 | 0.5187 | 0.0002 | 0.0002 | 0.0004 | 0.0004 | 0.0005 | 0.0006 | 0.0009 | 0.0011 | 0.0014 | 0.0015 |
| S23 | 0.2516 | 0.5181 | 0.0001 | 0.0001 | 0.0003 | 0.0003 | 0.0004 | 0.0005 | 0.0007 | 0.0009 | 0.0012 | 0.0014 |
| S24 | 0.2519 | 0.5186 | 0.0002 | 0.0002 | 0.0004 | 0.0005 | 0.0006 | 0.0007 | 0.0009 | 0.0011 | 0.0014 | 0.0015 |
| S25 | 0.2511 | 0.5183 | 0.0002 | 0.0002 | 0.0004 | 0.0004 | 0.0005 | 0.0006 | 0.0009 | 0.0011 | 0.0014 | 0.0015 |
| Average | 0.2511 | 0.5183 | 0.0002 | 0.0001 | 0.0003 | 0.0003 | 0.0005 | 0.0006 | 0.0008 | 0.0010 | 0.0013 | 0.0014 |
| Median | 0.2514 | 0.5184 | 0.0002 | 0.0001 | 0.0003 | 0.0004 | 0.0005 | 0.0006 | 0.0008 | 0.0011 | 0.0013 | 0.0014 |
| Std.dev | 0.0008 | 0.0011 | 0.0000 | 0.0000 | 0.0001 | 0.0001 | 0.0001 | 0.0001 | 0.0001 | 0.0001 | 0.0002 | 0.0002 |
| Max | 0.2523 | 0.5198 | 0.0002 | 0.0002 | 0.0004 | 0.0005 | 0.0006 | 0.0009 | 0.0012 | 0.0014 | 0.0017 | 0.0019 |
| Min | 0.2497 | 0.5168 | 0.0001 | 0.0001 | 0.0002 | 0.0002 | 0.0004 | 0.0003 | 0.0006 | 0.0008 | 0.0010 | 0.0011 |

| Sample Number (6500K) | Chromaticity Shift (Δu'v') | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 0hr (Initial) | | 1000hrs | 2000hrs | 3000hrs | 4000hrs | 5000hrs | 6000hrs | 7000hrs | 8000hrs | 9000hrs | 10000hrs |
| S01 | 0.1915 | 0.4572 | 0.0001 | 0.0001 | 0.0002 | 0.0002 | 0.0004 | 0.0005 | 0.0007 | 0.0009 | 0.0011 | 0.0012 |
| S02 | 0.1915 | 0.4571 | 0.0002 | 0.0001 | 0.0003 | 0.0004 | 0.0005 | 0.0006 | 0.0008 | 0.0011 | 0.0013 | 0.0014 |
| S03 | 0.1912 | 0.4569 | 0.0001 | 0.0001 | 0.0003 | 0.0004 | 0.0005 | 0.0003 | 0.0006 | 0.0008 | 0.0010 | 0.0014 |
| S04 | 0.1914 | 0.4570 | 0.0002 | 0.0002 | 0.0004 | 0.0004 | 0.0005 | 0.0005 | 0.0007 | 0.0010 | 0.0012 | 0.0011 |
| S05 | 0.1911 | 0.4571 | 0.0002 | 0.0001 | 0.0002 | 0.0002 | 0.0004 | 0.0006 | 0.0008 | 0.0011 | 0.0013 | 0.0014 |
| S06 | 0.1915 | 0.4573 | 0.0002 | 0.0001 | 0.0002 | 0.0002 | 0.0004 | 0.0006 | 0.0008 | 0.0011 | 0.0013 | 0.0015 |
| S07 | 0.1917 | 0.4575 | 0.0001 | 0.0001 | 0.0002 | 0.0002 | 0.0004 | 0.0005 | 0.0007 | 0.0009 | 0.0011 | 0.0012 |
| S08 | 0.1915 | 0.4571 | 0.0002 | 0.0001 | 0.0003 | 0.0004 | 0.0005 | 0.0006 | 0.0008 | 0.0011 | 0.0013 | 0.0014 |
| S09 | 0.1920 | 0.4575 | 0.0001 | 0.0001 | 0.0003 | 0.0004 | 0.0005 | 0.0003 | 0.0006 | 0.0008 | 0.0010 | 0.0014 |
| S10 | 0.1910 | 0.4572 | 0.0002 | 0.0002 | 0.0004 | 0.0004 | 0.0005 | 0.0005 | 0.0007 | 0.0010 | 0.0012 | 0.0011 |
| S11 | 0.1899 | 0.4597 | 0.0002 | 0.0001 | 0.0002 | 0.0002 | 0.0004 | 0.0006 | 0.0008 | 0.0011 | 0.0013 | 0.0014 |
| S12 | 0.1897 | 0.4594 | 0.0002 | 0.0001 | 0.0002 | 0.0002 | 0.0004 | 0.0006 | 0.0008 | 0.0011 | 0.0013 | 0.0015 |
| S13 | 0.1895 | 0.4597 | 0.0002 | 0.0001 | 0.0002 | 0.0002 | 0.0004 | 0.0006 | 0.0008 | 0.0011 | 0.0013 | 0.0015 |
| S14 | 0.1901 | 0.4599 | 0.0002 | 0.0002 | 0.0003 | 0.0003 | 0.0004 | 0.0007 | 0.0010 | 0.0012 | 0.0014 | 0.0017 |
| S15 | 0.1904 | 0.4599 | 0.0002 | 0.0002 | 0.0004 | 0.0004 | 0.0005 | 0.0006 | 0.0009 | 0.0011 | 0.0014 | 0.0015 |
| S16 | 0.1898 | 0.4596 | 0.0001 | 0.0001 | 0.0003 | 0.0003 | 0.0004 | 0.0005 | 0.0007 | 0.0009 | 0.0012 | 0.0014 |
| S17 | 0.1898 | 0.4594 | 0.0002 | 0.0002 | 0.0004 | 0.0004 | 0.0006 | 0.0006 | 0.0008 | 0.0010 | 0.0012 | 0.0014 |
| S18 | 0.1900 | 0.4597 | 0.0001 | 0.0001 | 0.0003 | 0.0004 | 0.0005 | 0.0003 | 0.0006 | 0.0008 | 0.0010 | 0.0011 |
| S19 | 0.1898 | 0.4595 | 0.0002 | 0.0002 | 0.0004 | 0.0004 | 0.0005 | 0.0005 | 0.0007 | 0.0010 | 0.0012 | 0.0014 |
| S20 | 0.1894 | 0.4596 | 0.0002 | 0.0001 | 0.0002 | 0.0002 | 0.0004 | 0.0006 | 0.0008 | 0.0011 | 0.0013 | 0.0015 |
| S21 | 0.1913 | 0.4585 | 0.0002 | 0.0002 | 0.0003 | 0.0003 | 0.0004 | 0.0007 | 0.0010 | 0.0012 | 0.0014 | 0.0017 |
| S22 | 0.1919 | 0.4588 | 0.0002 | 0.0002 | 0.0004 | 0.0004 | 0.0005 | 0.0006 | 0.0009 | 0.0011 | 0.0014 | 0.0015 |
| S23 | 0.1913 | 0.4582 | 0.0001 | 0.0001 | 0.0003 | 0.0003 | 0.0004 | 0.0005 | 0.0007 | 0.0009 | 0.0012 | 0.0014 |
| S24 | 0.1916 | 0.4587 | 0.0002 | 0.0002 | 0.0004 | 0.0005 | 0.0006 | 0.0007 | 0.0009 | 0.0011 | 0.0014 | 0.0015 |
| S25 | 0.1908 | 0.4584 | 0.0002 | 0.0002 | 0.0004 | 0.0004 | 0.0005 | 0.0006 | 0.0009 | 0.0011 | 0.0014 | 0.0015 |
| Average | 0.1908 | 0.4584 | 0.0002 | 0.0001 | 0.0003 | 0.0003 | 0.0005 | 0.0005 | 0.0008 | 0.0010 | 0.0012 | 0.0014 |
| Median | 0.1911 | 0.4585 | 0.0002 | 0.0001 | 0.0003 | 0.0004 | 0.0005 | 0.0006 | 0.0008 | 0.0011 | 0.0013 | 0.0014 |
| Std.dev | 0.0008 | 0.0011 | 0.0000 | 0.0000 | 0.0001 | 0.0001 | 0.0001 | 0.0001 | 0.0001 | 0.0001 | 0.0001 | 0.0002 |
| Max | 0.1920 | 0.4599 | 0.0002 | 0.0002 | 0.0004 | 0.0005 | 0.0006 | 0.0007 | 0.0010 | 0.0012 | 0.0014 | 0.0017 |
| Min | 0.1894 | 0.4569 | 0.0001 | 0.0001 | 0.0002 | 0.0002 | 0.0004 | 0.0003 | 0.0006 | 0.0008 | 0.0010 | 0.0011 |

### 3.2.7 Data Set 3, 105°C,60mA (Lumen Maintenance)

| Sample Number (2700K) | Φ(lm) | Lumen Maintenance (%) | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | 0hr (Initial) | 1000hrs | 2000hrs | 3000hrs | 4000hrs | 5000hrs | 6000hrs | 7000hrs | 8000hrs | 9000hrs | 10000hrs |
| S01 | 23.71 | 100.06 | 99.84 | 99.63 | 99.41 | 99.21 | 99.01 | 98.84 | 98.67 | 98.50 | 98.25 |
| S02 | 22.58 | 100.03 | 99.82 | 99.62 | 99.40 | 99.14 | 98.89 | 98.72 | 98.51 | 98.29 | 98.13 |
| S03 | 23.07 | 100.08 | 99.88 | 99.68 | 99.43 | 99.23 | 99.01 | 98.79 | 98.61 | 98.40 | 98.15 |
| S04 | 25.41 | 100.04 | 99.85 | 99.63 | 99.38 | 99.13 | 98.90 | 98.73 | 98.56 | 98.39 | 98.23 |
| S05 | 22.91 | 100.06 | 99.86 | 99.65 | 99.42 | 99.17 | 98.97 | 98.75 | 98.54 | 98.37 | 98.12 |
| S06 | 25.72 | 100.06 | 99.86 | 99.67 | 99.44 | 99.22 | 99.02 | 98.85 | 98.68 | 98.51 | 98.26 |
| S07 | 23.66 | 100.03 | 99.84 | 99.64 | 99.42 | 99.16 | 98.96 | 98.79 | 98.62 | 98.40 | 98.24 |
| S08 | 24.52 | 100.07 | 99.86 | 99.65 | 99.40 | 99.20 | 99.00 | 98.82 | 98.60 | 98.43 | 98.19 |
| S09 | 23.35 | 100.07 | 99.88 | 99.68 | 99.43 | 99.23 | 99.03 | 98.81 | 98.59 | 98.42 | 98.17 |
| S10 | 23.44 | 100.06 | 99.86 | 99.66 | 99.46 | 99.27 | 99.01 | 98.83 | 98.67 | 98.45 | 98.21 |
| S11 | 23.16 | 100.06 | 99.86 | 99.65 | 99.43 | 99.20 | 98.98 | 98.76 | 98.60 | 98.43 | 98.18 |
| S12 | 21.56 | 100.05 | 99.84 | 99.62 | 99.40 | 99.18 | 98.95 | 98.78 | 98.61 | 98.39 | 98.15 |
| S13 | 23.80 | 100.06 | 99.87 | 99.67 | 99.45 | 99.23 | 99.03 | 98.85 | 98.67 | 98.46 | 98.21 |
| S14 | 24.88 | 100.03 | 99.84 | 99.64 | 99.44 | 99.24 | 99.04 | 98.87 | 98.65 | 98.48 | 98.32 |
| S15 | 25.35 | 100.05 | 99.83 | 99.62 | 99.40 | 99.17 | 98.97 | 98.80 | 98.58 | 98.36 | 98.12 |
| S16 | 24.40 | 100.07 | 99.86 | 99.65 | 99.42 | 99.17 | 98.92 | 98.70 | 98.52 | 98.30 | 98.06 |
| S17 | 21.82 | 100.06 | 99.87 | 99.67 | 99.42 | 99.19 | 98.94 | 98.77 | 98.55 | 98.39 | 98.23 |
| S18 | 23.74 | 100.04 | 99.83 | 99.63 | 99.43 | 99.18 | 98.95 | 98.78 | 98.61 | 98.43 | 98.27 |
| S19 | 24.74 | 100.07 | 99.86 | 99.65 | 99.45 | 99.25 | 99.02 | 98.81 | 98.63 | 98.46 | 98.22 |
| S20 | 24.30 | 100.05 | 99.83 | 99.62 | 99.40 | 99.17 | 98.92 | 98.75 | 98.57 | 98.41 | 98.25 |
| S21 | 24.01 | 100.05 | 99.84 | 99.64 | 99.44 | 99.24 | 99.04 | 98.88 | 98.66 | 98.48 | 98.24 |
| S22 | 23.60 | 100.04 | 99.83 | 99.62 | 99.42 | 99.22 | 99.02 | 98.84 | 98.62 | 98.41 | 98.16 |
| S23 | 23.50 | 100.08 | 99.88 | 99.67 | 99.47 | 99.25 | 99.05 | 98.88 | 98.66 | 98.49 | 98.34 |
| S24 | 25.86 | 100.04 | 99.83 | 99.63 | 99.43 | 99.18 | 98.98 | 98.76 | 98.59 | 98.41 | 98.16 |
| S25 | 23.81 | 100.09 | 99.49 | 99.18 | 99.03 | 98.89 | 98.68 | 98.46 | 98.55 | 98.13 | 98.03 |
| Average | 23.88 | 100.06 | 99.84 | 99.63 | 99.41 | 99.19 | 98.97 | 98.78 | 98.60 | 98.41 | 98.20 |
| Median | 23.74 | 100.06 | 99.85 | 99.64 | 99.42 | 99.20 | 98.98 | 98.79 | 98.61 | 98.41 | 98.21 |
| Std.dev | 1.07 | 0.02 | 0.07 | 0.09 | 0.08 | 0.07 | 0.07 | 0.08 | 0.05 | 0.08 | 0.07 |
| Max | 25.86 | 100.09 | 99.88 | 99.68 | 99.47 | 99.27 | 99.05 | 98.88 | 98.68 | 98.51 | 98.34 |
| Min | 21.56 | 100.03 | 99.49 | 99.18 | 99.03 | 98.89 | 98.68 | 98.46 | 98.51 | 98.13 | 98.03 |

| Sample Number (3000K) | Φ(lm) | Lumen Maintenance (%) | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | 0hr (Initial) | 1000hrs | 2000hrs | 3000hrs | 4000hrs | 5000hrs | 6000hrs | 7000hrs | 8000hrs | 9000hrs | 10000hrs |
| S01 | 25.83 | 99.97 | 99.75 | 99.54 | 99.32 | 99.12 | 98.92 | 98.75 | 98.58 | 98.41 | 98.16 |
| S02 | 24.70 | 99.94 | 99.73 | 99.53 | 99.31 | 99.05 | 98.80 | 98.63 | 98.42 | 98.20 | 98.04 |
| S03 | 25.19 | 99.99 | 99.79 | 99.59 | 99.34 | 99.14 | 98.92 | 98.70 | 98.52 | 98.31 | 98.06 |
| S04 | 27.53 | 99.95 | 99.76 | 99.54 | 99.29 | 99.04 | 98.81 | 98.64 | 98.47 | 98.30 | 98.14 |
| S05 | 25.03 | 99.97 | 99.77 | 99.56 | 99.33 | 99.08 | 98.88 | 98.66 | 98.45 | 98.28 | 98.03 |
| S06 | 27.84 | 99.97 | 99.77 | 99.58 | 99.35 | 99.13 | 98.93 | 98.76 | 98.59 | 98.42 | 98.17 |
| S07 | 25.78 | 99.94 | 99.75 | 99.55 | 99.33 | 99.07 | 98.87 | 98.70 | 98.53 | 98.31 | 98.15 |
| S08 | 26.64 | 99.98 | 99.77 | 99.56 | 99.31 | 99.11 | 98.91 | 98.73 | 98.51 | 98.34 | 98.10 |
| S09 | 25.47 | 99.98 | 99.79 | 99.59 | 99.34 | 99.14 | 98.94 | 98.72 | 98.50 | 98.33 | 98.08 |
| S10 | 25.56 | 99.97 | 99.77 | 99.57 | 99.37 | 99.18 | 98.92 | 98.74 | 98.58 | 98.36 | 98.12 |
| S11 | 25.28 | 99.97 | 99.77 | 99.56 | 99.34 | 99.11 | 98.89 | 98.67 | 98.51 | 98.34 | 98.09 |
| S12 | 23.68 | 99.96 | 99.75 | 99.53 | 99.31 | 99.09 | 98.86 | 98.69 | 98.52 | 98.30 | 98.06 |
| S13 | 25.92 | 99.97 | 99.78 | 99.58 | 99.36 | 99.14 | 98.94 | 98.76 | 98.58 | 98.37 | 98.12 |
| S14 | 27.00 | 99.94 | 99.75 | 99.55 | 99.35 | 99.15 | 98.95 | 98.78 | 98.56 | 98.39 | 98.23 |
| S15 | 27.47 | 99.96 | 99.74 | 99.53 | 99.31 | 99.08 | 98.88 | 98.71 | 98.49 | 98.27 | 98.03 |
| S16 | 26.52 | 99.98 | 99.77 | 99.56 | 99.33 | 99.08 | 98.83 | 98.61 | 98.43 | 98.21 | 97.97 |
| S17 | 23.94 | 99.97 | 99.78 | 99.58 | 99.33 | 99.10 | 98.85 | 98.68 | 98.46 | 98.30 | 98.14 |
| S18 | 25.86 | 99.95 | 99.74 | 99.54 | 99.34 | 99.09 | 98.86 | 98.69 | 98.52 | 98.34 | 98.18 |
| S19 | 26.86 | 99.98 | 99.77 | 99.56 | 99.36 | 99.16 | 98.93 | 98.72 | 98.54 | 98.37 | 98.13 |
| S20 | 26.42 | 99.96 | 99.74 | 99.53 | 99.31 | 99.08 | 98.83 | 98.66 | 98.48 | 98.32 | 98.16 |
| S21 | 26.13 | 99.96 | 99.75 | 99.55 | 99.35 | 99.15 | 98.95 | 98.79 | 98.57 | 98.39 | 98.15 |
| S22 | 25.72 | 99.95 | 99.74 | 99.53 | 99.33 | 99.13 | 98.93 | 98.75 | 98.53 | 98.32 | 98.07 |
| S23 | 25.62 | 99.99 | 99.79 | 99.58 | 99.38 | 99.16 | 98.96 | 98.79 | 98.57 | 98.40 | 98.25 |
| S24 | 27.98 | 99.95 | 99.74 | 99.54 | 99.34 | 99.09 | 98.89 | 98.67 | 98.50 | 98.32 | 98.07 |
| S25 | 25.93 | 100.00 | 99.40 | 99.09 | 98.94 | 98.80 | 98.59 | 98.37 | 98.46 | 98.04 | 97.94 |
| Average | 26.00 | 99.97 | 99.75 | 99.54 | 99.32 | 99.10 | 98.88 | 98.69 | 98.51 | 98.32 | 98.11 |
| Median | 25.86 | 99.97 | 99.76 | 99.55 | 99.33 | 99.11 | 98.89 | 98.70 | 98.52 | 98.32 | 98.12 |
| Std.dev | 1.07 | 0.02 | 0.07 | 0.09 | 0.08 | 0.07 | 0.07 | 0.08 | 0.05 | 0.08 | 0.07 |
| Max | 27.98 | 100.00 | 99.79 | 99.59 | 99.38 | 99.18 | 98.96 | 98.79 | 98.59 | 98.42 | 98.25 |
| Min | 23.68 | 99.94 | 99.40 | 99.09 | 98.94 | 98.80 | 98.59 | 98.37 | 98.42 | 98.04 | 97.94 |

| Sample Number (6500K) | Φ(lm) | Lumen Maintenance (%) | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | 0hr (Initial) | 1000hrs | 2000hrs | 3000hrs | 4000hrs | 5000hrs | 6000hrs | 7000hrs | 8000hrs | 9000hrs | 10000hrs |
| **S01** | 27.36 | 100.01 | 99.79 | 99.58 | 99.36 | 99.16 | 98.96 | 98.79 | 98.62 | 98.45 | 98.20 |
| **S02** | 26.23 | 99.98 | 99.77 | 99.57 | 99.35 | 99.09 | 98.84 | 98.67 | 98.46 | 98.24 | 98.08 |
| **S03** | 26.72 | 100.03 | 99.83 | 99.63 | 99.38 | 99.18 | 98.96 | 98.74 | 98.56 | 98.35 | 98.10 |
| **S04** | 29.06 | 99.99 | 99.80 | 99.58 | 99.33 | 99.08 | 98.85 | 98.68 | 98.51 | 98.34 | 98.18 |
| **S05** | 26.56 | 100.01 | 99.81 | 99.60 | 99.37 | 99.12 | 98.92 | 98.70 | 98.49 | 98.32 | 98.07 |
| **S06** | 29.37 | 100.01 | 99.81 | 99.62 | 99.39 | 99.17 | 98.97 | 98.80 | 98.63 | 98.46 | 98.21 |
| **S07** | 27.31 | 99.98 | 99.79 | 99.59 | 99.37 | 99.11 | 98.91 | 98.74 | 98.57 | 98.35 | 98.19 |
| **S08** | 28.17 | 100.02 | 99.81 | 99.60 | 99.35 | 99.15 | 98.95 | 98.77 | 98.55 | 98.38 | 98.14 |
| **S09** | 27.00 | 100.02 | 99.83 | 99.63 | 99.38 | 99.18 | 98.98 | 98.76 | 98.54 | 98.37 | 98.12 |
| **S10** | 27.09 | 100.01 | 99.81 | 99.61 | 99.41 | 99.22 | 98.96 | 98.78 | 98.62 | 98.40 | 98.16 |
| **S11** | 26.81 | 100.01 | 99.81 | 99.60 | 99.38 | 99.15 | 98.93 | 98.71 | 98.55 | 98.38 | 98.13 |
| **S12** | 25.21 | 100.00 | 99.79 | 99.57 | 99.35 | 99.13 | 98.90 | 98.73 | 98.56 | 98.34 | 98.10 |
| **S13** | 27.45 | 100.01 | 99.82 | 99.62 | 99.40 | 99.18 | 98.98 | 98.80 | 98.62 | 98.41 | 98.16 |
| **S14** | 28.53 | 99.98 | 99.79 | 99.59 | 99.39 | 99.19 | 98.99 | 98.82 | 98.60 | 98.43 | 98.27 |
| **S15** | 29.00 | 100.00 | 99.78 | 99.57 | 99.35 | 99.12 | 98.92 | 98.75 | 98.53 | 98.31 | 98.07 |
| **S16** | 28.05 | 100.02 | 99.81 | 99.60 | 99.37 | 99.12 | 98.87 | 98.65 | 98.47 | 98.25 | 98.01 |
| **S17** | 25.47 | 100.01 | 99.82 | 99.62 | 99.37 | 99.14 | 98.89 | 98.72 | 98.50 | 98.34 | 98.18 |
| **S18** | 27.39 | 99.99 | 99.78 | 99.58 | 99.38 | 99.13 | 98.90 | 98.73 | 98.56 | 98.38 | 98.22 |
| **S19** | 28.39 | 100.02 | 99.81 | 99.60 | 99.40 | 99.20 | 98.97 | 98.76 | 98.58 | 98.41 | 98.17 |
| **S20** | 27.95 | 100.00 | 99.78 | 99.57 | 99.35 | 99.12 | 98.87 | 98.70 | 98.52 | 98.36 | 98.20 |
| **S21** | 27.66 | 100.00 | 99.79 | 99.59 | 99.39 | 99.19 | 98.99 | 98.83 | 98.61 | 98.43 | 98.19 |
| **S22** | 27.25 | 99.99 | 99.78 | 99.57 | 99.37 | 99.17 | 98.97 | 98.79 | 98.57 | 98.36 | 98.11 |
| **S23** | 27.15 | 100.03 | 99.83 | 99.62 | 99.42 | 99.20 | 99.00 | 98.83 | 98.61 | 98.44 | 98.29 |
| **S24** | 29.51 | 99.99 | 99.78 | 99.58 | 99.38 | 99.13 | 98.93 | 98.71 | 98.54 | 98.36 | 98.11 |
| **S25** | 27.46 | 100.04 | 99.44 | 99.13 | 98.98 | 98.84 | 98.63 | 98.41 | 98.50 | 98.08 | 97.98 |
| **Average** | 27.53 | 100.00 | 99.78 | 99.57 | 99.35 | 99.13 | 98.92 | 98.73 | 98.55 | 98.35 | 98.14 |
| **Median** | 27.39 | 100.01 | 99.80 | 99.59 | 99.37 | 99.15 | 98.93 | 98.74 | 98.56 | 98.36 | 98.16 |
| **Std.dev** | 1.07 | 0.02 | 0.07 | 0.09 | 0.08 | 0.07 | 0.07 | 0.08 | 0.05 | 0.08 | 0.07 |
| **Max** | 29.51 | 100.04 | 99.83 | 99.63 | 99.42 | 99.22 | 99.00 | 98.83 | 98.63 | 98.46 | 98.29 |
| **Min** | 25.21 | 99.98 | 99.44 | 99.13 | 98.98 | 98.84 | 98.63 | 98.41 | 98.46 | 98.08 | 97.98 |

### 3.2.8 Data Set 3, 105°C,60mA (Forward Voltage)

| Sample Number (2700K) | Forward Voltage(V) | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | 0hr (Initial) | 1000hrs | 2000hrs | 3000hrs | 4000hrs | 5000hrs | 6000hrs | 7000hrs | 8000hrs | 9000hrs | 10000hrs |
| S01 | 2.89 | 2.87 | 2.89 | 2.90 | 2.91 | 2.91 | 2.89 | 2.90 | 2.90 | 2.89 | 2.91 |
| S02 | 2.93 | 2.94 | 2.95 | 2.95 | 2.93 | 2.93 | 2.94 | 2.96 | 2.93 | 2.93 | 2.95 |
| S03 | 2.92 | 2.94 | 2.94 | 2.91 | 2.92 | 2.95 | 2.93 | 2.92 | 2.94 | 2.93 | 2.94 |
| S04 | 2.88 | 2.90 | 2.90 | 2.89 | 2.90 | 2.88 | 2.90 | 2.90 | 2.90 | 2.90 | 2.90 |
| S05 | 2.90 | 2.92 | 2.93 | 2.92 | 2.92 | 2.91 | 2.90 | 2.92 | 2.92 | 2.92 | 2.90 |
| S06 | 2.88 | 2.87 | 2.86 | 2.90 | 2.88 | 2.88 | 2.89 | 2.89 | 2.89 | 2.88 | 2.90 |
| S07 | 2.96 | 2.98 | 2.98 | 2.98 | 2.97 | 2.96 | 2.99 | 2.96 | 2.98 | 2.98 | 2.99 |
| S08 | 2.89 | 2.91 | 2.89 | 2.90 | 2.89 | 2.90 | 2.91 | 2.90 | 2.91 | 2.91 | 2.88 |
| S09 | 2.96 | 2.98 | 2.98 | 2.98 | 2.95 | 2.98 | 2.97 | 2.96 | 2.98 | 2.95 | 2.97 |
| S10 | 2.90 | 2.91 | 2.91 | 2.91 | 2.90 | 2.92 | 2.92 | 2.90 | 2.91 | 2.91 | 2.91 |
| S11 | 2.92 | 2.93 | 2.93 | 2.91 | 2.93 | 2.91 | 2.92 | 2.92 | 2.93 | 2.93 | 2.93 |
| S12 | 2.91 | 2.92 | 2.91 | 2.91 | 2.92 | 2.93 | 2.89 | 2.93 | 2.93 | 2.90 | 2.93 |
| S13 | 2.92 | 2.92 | 2.94 | 2.94 | 2.95 | 2.93 | 2.93 | 2.92 | 2.94 | 2.94 | 2.91 |
| S14 | 2.93 | 2.92 | 2.95 | 2.95 | 2.95 | 2.95 | 2.93 | 2.93 | 2.96 | 2.95 | 2.95 |
| S15 | 2.93 | 2.94 | 2.93 | 2.92 | 2.93 | 2.95 | 2.93 | 2.93 | 2.93 | 2.95 | 2.92 |
| S16 | 2.96 | 2.95 | 2.98 | 2.96 | 2.98 | 2.95 | 2.97 | 2.96 | 2.95 | 2.95 | 2.96 |
| S17 | 2.94 | 2.94 | 2.95 | 2.96 | 2.95 | 2.96 | 2.96 | 2.95 | 2.96 | 2.94 | 2.93 |
| S18 | 2.93 | 2.95 | 2.94 | 2.95 | 2.93 | 2.94 | 2.95 | 2.94 | 2.94 | 2.95 | 2.94 |
| S19 | 2.96 | 2.97 | 2.97 | 2.96 | 2.96 | 2.98 | 2.96 | 2.96 | 2.97 | 2.96 | 2.98 |
| S20 | 2.90 | 2.91 | 2.91 | 2.91 | 2.92 | 2.91 | 2.91 | 2.91 | 2.92 | 2.91 | 2.91 |
| S21 | 2.95 | 2.96 | 2.97 | 2.95 | 2.97 | 2.95 | 2.95 | 2.98 | 2.95 | 2.96 | 2.97 |
| S22 | 2.88 | 2.88 | 2.90 | 2.88 | 2.88 | 2.89 | 2.90 | 2.90 | 2.88 | 2.87 | 2.88 |
| S23 | 2.89 | 2.90 | 2.88 | 2.90 | 2.91 | 2.91 | 2.87 | 2.89 | 2.89 | 2.90 | 2.89 |
| S24 | 2.95 | 2.95 | 2.97 | 2.95 | 2.96 | 2.95 | 2.98 | 2.97 | 2.97 | 2.97 | 2.97 |
| S25 | 2.87 | 2.87 | 2.85 | 2.87 | 2.87 | 2.86 | 2.85 | 2.87 | 2.87 | 2.88 | 2.87 |
| Average | 2.92 | 2.93 | 2.93 | 2.93 | 2.93 | 2.93 | 2.93 | 2.93 | 2.93 | 2.93 | 2.93 |
| Median | 2.92 | 2.92 | 2.93 | 2.92 | 2.93 | 2.93 | 2.93 | 2.92 | 2.93 | 2.93 | 2.93 |
| Std.dev | 0.03 | 0.03 | 0.04 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 |
| Max | 2.96 | 2.98 | 2.98 | 2.98 | 2.98 | 2.98 | 2.99 | 2.98 | 2.98 | 2.98 | 2.99 |
| Min | 2.87 | 2.87 | 2.85 | 2.87 | 2.87 | 2.86 | 2.85 | 2.87 | 2.87 | 2.87 | 2.87 |

| Sample Number (3000K) | Forward Voltage(V) | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | 0hr (Initial) | 1000hrs | 2000hrs | 3000hrs | 4000hrs | 5000hrs | 6000hrs | 7000hrs | 8000hrs | 9000hrs | 10000hrs |
| **S01** | 2.94 | 2.92 | 2.94 | 2.95 | 2.96 | 2.96 | 2.94 | 2.95 | 2.95 | 2.94 | 2.96 |
| **S02** | 2.98 | 2.99 | 3.00 | 3.00 | 2.98 | 2.98 | 2.99 | 3.01 | 2.98 | 2.98 | 3.00 |
| **S03** | 2.97 | 2.99 | 2.99 | 2.96 | 2.97 | 3.00 | 2.98 | 2.97 | 2.99 | 2.98 | 2.99 |
| **S04** | 2.93 | 2.95 | 2.95 | 2.94 | 2.95 | 2.93 | 2.95 | 2.95 | 2.95 | 2.95 | 2.95 |
| **S05** | 2.95 | 2.97 | 2.98 | 2.97 | 2.97 | 2.96 | 2.95 | 2.97 | 2.97 | 2.97 | 2.95 |
| **S06** | 2.93 | 2.92 | 2.91 | 2.95 | 2.93 | 2.93 | 2.94 | 2.94 | 2.94 | 2.93 | 2.95 |
| **S07** | 3.01 | 3.03 | 3.03 | 3.03 | 3.02 | 3.01 | 3.04 | 3.01 | 3.03 | 3.03 | 3.04 |
| **S08** | 2.94 | 2.96 | 2.94 | 2.95 | 2.94 | 2.95 | 2.96 | 2.95 | 2.96 | 2.96 | 2.93 |
| **S09** | 3.01 | 3.03 | 3.03 | 3.03 | 3.00 | 3.03 | 3.02 | 3.01 | 3.03 | 3.00 | 3.02 |
| **S10** | 2.95 | 2.96 | 2.96 | 2.96 | 2.95 | 2.97 | 2.97 | 2.95 | 2.96 | 2.96 | 2.96 |
| **S11** | 2.97 | 2.98 | 2.98 | 2.96 | 2.98 | 2.96 | 2.97 | 2.97 | 2.98 | 2.98 | 2.98 |
| **S12** | 2.96 | 2.97 | 2.96 | 2.96 | 2.97 | 2.98 | 2.94 | 2.98 | 2.98 | 2.95 | 2.98 |
| **S13** | 2.97 | 2.97 | 2.99 | 2.99 | 3.00 | 2.98 | 2.98 | 2.97 | 2.99 | 2.99 | 2.96 |
| **S14** | 2.98 | 2.97 | 3.00 | 3.00 | 3.00 | 3.00 | 2.98 | 2.98 | 3.01 | 3.00 | 3.00 |
| **S15** | 2.98 | 2.99 | 2.98 | 2.97 | 2.98 | 3.00 | 2.98 | 2.98 | 2.98 | 3.00 | 2.97 |
| **S16** | 3.01 | 3.00 | 3.03 | 3.01 | 3.03 | 3.00 | 3.02 | 3.01 | 3.00 | 3.00 | 3.01 |
| **S17** | 2.99 | 2.99 | 3.00 | 3.01 | 3.00 | 3.01 | 3.01 | 3.00 | 3.01 | 2.99 | 2.98 |
| **S18** | 2.98 | 3.00 | 2.99 | 3.00 | 2.98 | 2.99 | 3.00 | 2.99 | 2.99 | 3.00 | 2.99 |
| **S19** | 3.01 | 3.02 | 3.02 | 3.01 | 3.01 | 3.03 | 3.01 | 3.01 | 3.02 | 3.01 | 3.03 |
| **S20** | 2.95 | 2.96 | 2.96 | 2.96 | 2.97 | 2.96 | 2.96 | 2.96 | 2.97 | 2.96 | 2.96 |
| **S21** | 3.00 | 3.01 | 3.02 | 3.00 | 3.02 | 3.00 | 3.00 | 3.03 | 3.00 | 3.01 | 3.02 |
| **S22** | 2.93 | 2.93 | 2.95 | 2.93 | 2.93 | 2.94 | 2.95 | 2.95 | 2.93 | 2.92 | 2.93 |
| **S23** | 2.94 | 2.95 | 2.93 | 2.95 | 2.96 | 2.96 | 2.92 | 2.94 | 2.94 | 2.95 | 2.94 |
| **S24** | 3.00 | 3.00 | 3.02 | 3.00 | 3.01 | 3.00 | 3.03 | 3.02 | 3.02 | 3.02 | 3.02 |
| **S25** | 2.92 | 2.92 | 2.90 | 2.92 | 2.92 | 2.91 | 2.90 | 2.92 | 2.92 | 2.93 | 2.92 |
| **Average** | 2.97 | 2.98 | 2.98 | 2.98 | 2.98 | 2.98 | 2.98 | 2.98 | 2.98 | 2.98 | 2.98 |
| **Median** | 2.97 | 2.97 | 2.98 | 2.97 | 2.98 | 2.98 | 2.98 | 2.97 | 2.98 | 2.98 | 2.98 |
| **Std.dev** | 0.03 | 0.03 | 0.04 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 |
| **Max** | 3.01 | 3.03 | 3.03 | 3.03 | 3.03 | 3.03 | 3.04 | 3.03 | 3.03 | 3.03 | 3.04 |
| **Min** | 2.92 | 2.92 | 2.90 | 2.92 | 2.92 | 2.91 | 2.90 | 2.92 | 2.92 | 2.92 | 2.92 |

| Sample Number (6500K) | Forward Voltage(V) | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | 0hr (Initial) | 1000hrs | 2000hrs | 3000hrs | 4000hrs | 5000hrs | 6000hrs | 7000hrs | 8000hrs | 9000hrs | 10000hrs |
| **S01** | 3.02 | 3.04 | 3.05 | 3.04 | 3.04 | 3.03 | 3.02 | 3.04 | 3.04 | 3.04 | 3.02 |
| **S02** | 3.00 | 2.99 | 2.98 | 3.02 | 3.00 | 3.00 | 3.01 | 3.01 | 3.01 | 3.00 | 3.02 |
| **S03** | 3.08 | 3.10 | 3.10 | 3.10 | 3.09 | 3.08 | 3.11 | 3.08 | 3.10 | 3.10 | 3.11 |
| **S04** | 3.01 | 3.03 | 3.01 | 3.02 | 3.01 | 3.02 | 3.03 | 3.02 | 3.03 | 3.03 | 3.00 |
| **S05** | 3.08 | 3.10 | 3.10 | 3.10 | 3.07 | 3.10 | 3.09 | 3.08 | 3.10 | 3.07 | 3.09 |
| **S06** | 3.02 | 3.03 | 3.03 | 3.03 | 3.02 | 3.04 | 3.04 | 3.02 | 3.03 | 3.03 | 3.03 |
| **S07** | 3.04 | 3.05 | 3.05 | 3.03 | 3.05 | 3.03 | 3.04 | 3.04 | 3.05 | 3.05 | 3.05 |
| **S08** | 3.03 | 3.04 | 3.03 | 3.03 | 3.04 | 3.05 | 3.01 | 3.05 | 3.05 | 3.02 | 3.05 |
| **S09** | 3.05 | 3.07 | 3.06 | 3.07 | 3.05 | 3.06 | 3.07 | 3.06 | 3.06 | 3.07 | 3.06 |
| **S10** | 3.08 | 3.09 | 3.09 | 3.08 | 3.08 | 3.10 | 3.08 | 3.08 | 3.09 | 3.08 | 3.10 |
| **S11** | 3.04 | 3.04 | 3.06 | 3.06 | 3.07 | 3.05 | 3.05 | 3.04 | 3.06 | 3.06 | 3.03 |
| **S12** | 3.05 | 3.04 | 3.07 | 3.07 | 3.07 | 3.07 | 3.05 | 3.05 | 3.08 | 3.07 | 3.07 |
| **S13** | 3.05 | 3.06 | 3.05 | 3.04 | 3.05 | 3.07 | 3.05 | 3.05 | 3.05 | 3.07 | 3.04 |
| **S14** | 3.08 | 3.07 | 3.10 | 3.08 | 3.10 | 3.07 | 3.09 | 3.08 | 3.07 | 3.07 | 3.08 |
| **S15** | 3.06 | 3.06 | 3.07 | 3.08 | 3.07 | 3.08 | 3.08 | 3.07 | 3.08 | 3.06 | 3.05 |
| **S16** | 3.01 | 3.02 | 3.00 | 3.02 | 3.03 | 3.03 | 2.99 | 3.01 | 3.01 | 3.02 | 3.01 |
| **S17** | 3.07 | 3.07 | 3.09 | 3.07 | 3.08 | 3.07 | 3.10 | 3.09 | 3.09 | 3.09 | 3.09 |
| **S18** | 2.99 | 2.99 | 2.97 | 2.99 | 2.99 | 2.98 | 2.97 | 2.99 | 2.99 | 3.00 | 2.99 |
| **S19** | 3.01 | 2.99 | 3.01 | 3.02 | 3.03 | 3.03 | 3.01 | 3.02 | 3.02 | 3.01 | 3.03 |
| **S20** | 3.05 | 3.06 | 3.07 | 3.07 | 3.05 | 3.05 | 3.06 | 3.08 | 3.05 | 3.05 | 3.07 |
| **S21** | 3.04 | 3.06 | 3.06 | 3.03 | 3.04 | 3.07 | 3.05 | 3.04 | 3.06 | 3.05 | 3.06 |
| **S22** | 3.00 | 3.02 | 3.02 | 3.01 | 3.02 | 3.00 | 3.02 | 3.02 | 3.02 | 3.02 | 3.02 |
| **S23** | 3.02 | 3.03 | 3.03 | 3.03 | 3.04 | 3.03 | 3.03 | 3.03 | 3.04 | 3.03 | 3.03 |
| **S24** | 3.07 | 3.08 | 3.09 | 3.07 | 3.09 | 3.07 | 3.07 | 3.10 | 3.07 | 3.08 | 3.09 |
| **S25** | 3.00 | 3.00 | 3.02 | 3.00 | 3.00 | 3.01 | 3.02 | 3.02 | 3.00 | 2.99 | 3.00 |
| **Average** | 3.04 | 3.05 | 3.05 | 3.05 | 3.05 | 3.05 | 3.05 | 3.05 | 3.05 | 3.05 | 3.05 |
| **Median** | 3.04 | 3.04 | 3.05 | 3.04 | 3.05 | 3.05 | 3.05 | 3.04 | 3.05 | 3.05 | 3.05 |
| **Std.dev** | 0.03 | 0.03 | 0.04 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 | 0.03 |
| **Max** | 3.08 | 3.10 | 3.10 | 3.10 | 3.10 | 3.10 | 3.11 | 3.10 | 3.10 | 3.10 | 3.11 |
| **Min** | 2.99 | 2.99 | 2.97 | 2.99 | 2.99 | 2.98 | 2.97 | 2.99 | 2.99 | 2.99 | 2.99 |

### 3.2.9 Data Set 3, 105°C,60mA (Chromaticity Shift)

| Sample Number (2700K) | Chromaticity Shift (Δu'v') | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 0hr (Initial) | | 1000hrs | 2000hrs | 3000hrs | 4000hrs | 5000hrs | 6000hrs | 7000hrs | 8000hrs | 9000hrs | 10000hrs |
| S01 | 0.2597 | 0.5255 | 0.0001 | 0.0001 | 0.0003 | 0.0005 | 0.0007 | 0.0008 | 0.0011 | 0.0013 | 0.0016 | 0.0014 |
| S02 | 0.2597 | 0.5254 | 0.0001 | 0.0001 | 0.0003 | 0.0005 | 0.0006 | 0.0011 | 0.0014 | 0.0016 | 0.0019 | 0.0017 |
| S03 | 0.2594 | 0.5252 | 0.0002 | 0.0002 | 0.0004 | 0.0007 | 0.0008 | 0.0008 | 0.0011 | 0.0013 | 0.0016 | 0.0021 |
| S04 | 0.2596 | 0.5253 | 0.0002 | 0.0002 | 0.0003 | 0.0006 | 0.0007 | 0.0008 | 0.0011 | 0.0013 | 0.0015 | 0.0019 |
| S05 | 0.2593 | 0.5254 | 0.0002 | 0.0002 | 0.0003 | 0.0006 | 0.0007 | 0.0008 | 0.0011 | 0.0013 | 0.0016 | 0.0018 |
| S06 | 0.2597 | 0.5256 | 0.0002 | 0.0002 | 0.0003 | 0.0005 | 0.0007 | 0.0008 | 0.0010 | 0.0013 | 0.0015 | 0.0017 |
| S07 | 0.2599 | 0.5258 | 0.0002 | 0.0002 | 0.0004 | 0.0007 | 0.0008 | 0.0009 | 0.0011 | 0.0013 | 0.0016 | 0.0016 |
| S08 | 0.2597 | 0.5254 | 0.0002 | 0.0002 | 0.0004 | 0.0006 | 0.0008 | 0.0008 | 0.0010 | 0.0012 | 0.0014 | 0.0017 |
| S09 | 0.2602 | 0.5258 | 0.0001 | 0.0001 | 0.0003 | 0.0006 | 0.0007 | 0.0005 | 0.0008 | 0.0010 | 0.0012 | 0.0019 |
| S10 | 0.2592 | 0.5255 | 0.0002 | 0.0002 | 0.0004 | 0.0006 | 0.0007 | 0.0007 | 0.0009 | 0.0012 | 0.0014 | 0.0014 |
| S11 | 0.2581 | 0.5280 | 0.0002 | 0.0001 | 0.0002 | 0.0004 | 0.0006 | 0.0008 | 0.0010 | 0.0013 | 0.0015 | 0.0016 |
| S12 | 0.2579 | 0.5277 | 0.0002 | 0.0002 | 0.0003 | 0.0005 | 0.0006 | 0.0009 | 0.0012 | 0.0014 | 0.0016 | 0.0018 |
| S13 | 0.2577 | 0.5280 | 0.0001 | 0.0001 | 0.0002 | 0.0004 | 0.0005 | 0.0008 | 0.0010 | 0.0012 | 0.0015 | 0.0016 |
| S14 | 0.2583 | 0.5282 | 0.0002 | 0.0002 | 0.0004 | 0.0007 | 0.0008 | 0.0007 | 0.0009 | 0.0011 | 0.0014 | 0.0020 |
| S15 | 0.2586 | 0.5282 | 0.0002 | 0.0001 | 0.0002 | 0.0004 | 0.0006 | 0.0008 | 0.0011 | 0.0013 | 0.0015 | 0.0017 |
| S16 | 0.2580 | 0.5279 | 0.0002 | 0.0001 | 0.0002 | 0.0004 | 0.0006 | 0.0010 | 0.0012 | 0.0014 | 0.0017 | 0.0017 |
| S17 | 0.2580 | 0.5277 | 0.0001 | 0.0001 | 0.0002 | 0.0004 | 0.0006 | 0.0007 | 0.0009 | 0.0011 | 0.0013 | 0.0019 |
| S18 | 0.2582 | 0.5280 | 0.0002 | 0.0001 | 0.0003 | 0.0006 | 0.0007 | 0.0008 | 0.0010 | 0.0013 | 0.0015 | 0.0017 |
| S19 | 0.2580 | 0.5278 | 0.0001 | 0.0001 | 0.0003 | 0.0005 | 0.0006 | 0.0007 | 0.0009 | 0.0011 | 0.0014 | 0.0016 |
| S20 | 0.2576 | 0.5279 | 0.0002 | 0.0002 | 0.0004 | 0.0007 | 0.0008 | 0.0009 | 0.0011 | 0.0013 | 0.0016 | 0.0016 |
| S21 | 0.2595 | 0.5268 | 0.0002 | 0.0002 | 0.0004 | 0.0006 | 0.0008 | 0.0008 | 0.0010 | 0.0012 | 0.0014 | 0.0013 |
| S22 | 0.2601 | 0.5271 | 0.0001 | 0.0001 | 0.0003 | 0.0006 | 0.0007 | 0.0005 | 0.0008 | 0.0010 | 0.0012 | 0.0016 |
| S23 | 0.2595 | 0.5265 | 0.0002 | 0.0002 | 0.0004 | 0.0006 | 0.0007 | 0.0008 | 0.0011 | 0.0013 | 0.0016 | 0.0016 |
| S24 | 0.2598 | 0.5270 | 0.0002 | 0.0002 | 0.0004 | 0.0006 | 0.0007 | 0.0006 | 0.0008 | 0.0010 | 0.0012 | 0.0017 |
| S25 | 0.2590 | 0.5267 | 0.0002 | 0.0002 | 0.0004 | 0.0007 | 0.0008 | 0.0009 | 0.0011 | 0.0013 | 0.0016 | 0.0017 |
| Average | 0.2590 | 0.5267 | 0.0002 | 0.0002 | 0.0003 | 0.0006 | 0.0007 | 0.0008 | 0.0010 | 0.0012 | 0.0015 | 0.0017 |
| Median | 0.2593 | 0.5268 | 0.0002 | 0.0002 | 0.0003 | 0.0006 | 0.0007 | 0.0008 | 0.0010 | 0.0013 | 0.0015 | 0.0017 |
| Std.dev | 0.0008 | 0.0011 | 0.0000 | 0.0000 | 0.0001 | 0.0001 | 0.0001 | 0.0001 | 0.0001 | 0.0001 | 0.0002 | 0.0002 |
| Max | 0.2602 | 0.5282 | 0.0002 | 0.0002 | 0.0004 | 0.0007 | 0.0008 | 0.0011 | 0.0014 | 0.0016 | 0.0019 | 0.0021 |
| Min | 0.2576 | 0.5252 | 0.0001 | 0.0001 | 0.0002 | 0.0004 | 0.0005 | 0.0005 | 0.0008 | 0.0010 | 0.0012 | 0.0013 |

| Sample Number (3000K) | Chromaticity Shift (Δu'v') | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 0hr (Initial) | | 1000hrs | 2000hrs | 3000hrs | 4000hrs | 5000hrs | 6000hrs | 7000hrs | 8000hrs | 9000hrs | 10000hrs |
| S01 | 0.2508 | 0.5166 | 0.0003 | 0.0003 | 0.0004 | 0.0006 | 0.0007 | 0.0010 | 0.0013 | 0.0015 | 0.0017 | 0.0019 |
| S02 | 0.2508 | 0.5165 | 0.0002 | 0.0002 | 0.0003 | 0.0005 | 0.0006 | 0.0009 | 0.0011 | 0.0013 | 0.0016 | 0.0017 |
| S03 | 0.2505 | 0.5163 | 0.0003 | 0.0003 | 0.0005 | 0.0008 | 0.0009 | 0.0008 | 0.0010 | 0.0012 | 0.0015 | 0.0021 |
| S04 | 0.2507 | 0.5164 | 0.0003 | 0.0002 | 0.0003 | 0.0005 | 0.0007 | 0.0009 | 0.0012 | 0.0014 | 0.0016 | 0.0018 |
| S05 | 0.2504 | 0.5165 | 0.0003 | 0.0002 | 0.0003 | 0.0005 | 0.0007 | 0.0011 | 0.0013 | 0.0015 | 0.0018 | 0.0018 |
| S06 | 0.2508 | 0.5167 | 0.0003 | 0.0003 | 0.0005 | 0.0007 | 0.0008 | 0.0009 | 0.0012 | 0.0014 | 0.0017 | 0.0017 |
| S07 | 0.2510 | 0.5169 | 0.0003 | 0.0002 | 0.0003 | 0.0005 | 0.0007 | 0.0011 | 0.0013 | 0.0015 | 0.0018 | 0.0018 |
| S08 | 0.2508 | 0.5165 | 0.0002 | 0.0002 | 0.0003 | 0.0005 | 0.0007 | 0.0008 | 0.0010 | 0.0012 | 0.0014 | 0.0020 |
| S09 | 0.2513 | 0.5169 | 0.0003 | 0.0002 | 0.0004 | 0.0007 | 0.0008 | 0.0009 | 0.0011 | 0.0014 | 0.0016 | 0.0018 |
| S10 | 0.2503 | 0.5166 | 0.0002 | 0.0002 | 0.0004 | 0.0006 | 0.0007 | 0.0008 | 0.0010 | 0.0012 | 0.0015 | 0.0017 |
| S11 | 0.2492 | 0.5191 | 0.0003 | 0.0003 | 0.0005 | 0.0008 | 0.0009 | 0.0010 | 0.0012 | 0.0014 | 0.0017 | 0.0017 |
| S12 | 0.2490 | 0.5188 | 0.0003 | 0.0003 | 0.0005 | 0.0007 | 0.0009 | 0.0009 | 0.0011 | 0.0013 | 0.0015 | 0.0014 |
| S13 | 0.2488 | 0.5191 | 0.0003 | 0.0003 | 0.0005 | 0.0007 | 0.0009 | 0.0009 | 0.0011 | 0.0013 | 0.0015 | 0.0014 |
| S14 | 0.2494 | 0.5193 | 0.0002 | 0.0002 | 0.0004 | 0.0007 | 0.0008 | 0.0006 | 0.0009 | 0.0011 | 0.0013 | 0.0017 |
| S15 | 0.2497 | 0.5193 | 0.0003 | 0.0003 | 0.0005 | 0.0007 | 0.0008 | 0.0009 | 0.0012 | 0.0014 | 0.0017 | 0.0017 |
| S16 | 0.2491 | 0.5190 | 0.0003 | 0.0002 | 0.0003 | 0.0005 | 0.0007 | 0.0011 | 0.0013 | 0.0015 | 0.0018 | 0.0018 |
| S17 | 0.2491 | 0.5188 | 0.0002 | 0.0002 | 0.0003 | 0.0005 | 0.0007 | 0.0008 | 0.0010 | 0.0012 | 0.0014 | 0.0020 |
| S18 | 0.2493 | 0.5191 | 0.0003 | 0.0002 | 0.0004 | 0.0007 | 0.0008 | 0.0009 | 0.0011 | 0.0014 | 0.0016 | 0.0018 |
| S19 | 0.2491 | 0.5189 | 0.0002 | 0.0002 | 0.0004 | 0.0006 | 0.0007 | 0.0008 | 0.0010 | 0.0012 | 0.0015 | 0.0017 |
| S20 | 0.2487 | 0.5190 | 0.0003 | 0.0003 | 0.0005 | 0.0008 | 0.0009 | 0.0010 | 0.0012 | 0.0014 | 0.0017 | 0.0017 |
| S21 | 0.2506 | 0.5179 | 0.0003 | 0.0003 | 0.0005 | 0.0007 | 0.0009 | 0.0009 | 0.0011 | 0.0013 | 0.0015 | 0.0014 |
| S22 | 0.2512 | 0.5182 | 0.0002 | 0.0002 | 0.0004 | 0.0007 | 0.0008 | 0.0006 | 0.0009 | 0.0011 | 0.0013 | 0.0017 |
| S23 | 0.2506 | 0.5176 | 0.0003 | 0.0003 | 0.0005 | 0.0007 | 0.0008 | 0.0009 | 0.0012 | 0.0014 | 0.0017 | 0.0017 |
| S24 | 0.2509 | 0.5181 | 0.0003 | 0.0003 | 0.0005 | 0.0007 | 0.0008 | 0.0007 | 0.0009 | 0.0011 | 0.0013 | 0.0018 |
| S25 | 0.2501 | 0.5178 | 0.0003 | 0.0003 | 0.0005 | 0.0008 | 0.0009 | 0.0010 | 0.0012 | 0.0014 | 0.0017 | 0.0018 |
| Average | 0.2501 | 0.5178 | 0.0003 | 0.0002 | 0.0004 | 0.0006 | 0.0008 | 0.0009 | 0.0011 | 0.0013 | 0.0016 | 0.0017 |
| Median | 0.2504 | 0.5179 | 0.0003 | 0.0002 | 0.0004 | 0.0007 | 0.0008 | 0.0009 | 0.0011 | 0.0014 | 0.0016 | 0.0017 |
| Std.dev | 0.0008 | 0.0011 | 0.0000 | 0.0000 | 0.0001 | 0.0001 | 0.0001 | 0.0001 | 0.0001 | 0.0001 | 0.0002 | 0.0002 |
| Max | 0.2513 | 0.5193 | 0.0003 | 0.0003 | 0.0005 | 0.0008 | 0.0009 | 0.0011 | 0.0013 | 0.0015 | 0.0018 | 0.0021 |
| Min | 0.2487 | 0.5163 | 0.0002 | 0.0002 | 0.0003 | 0.0005 | 0.0006 | 0.0006 | 0.0009 | 0.0011 | 0.0013 | 0.0014 |

| Sample Number (6500K) | Chromaticity Shift (Δu'v') | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 0hr (Initial) | | 1000hrs | 2000hrs | 3000hrs | 4000hrs | 5000hrs | 6000hrs | 7000hrs | 8000hrs | 9000hrs | 10000hrs |
| S01 | 0.1924 | 0.4541 | 0.0002 | 0.0002 | 0.0003 | 0.0005 | 0.0006 | 0.0009 | 0.0012 | 0.0014 | 0.0016 | 0.0018 |
| S02 | 0.1924 | 0.4540 | 0.0001 | 0.0001 | 0.0002 | 0.0004 | 0.0006 | 0.0007 | 0.0009 | 0.0011 | 0.0013 | 0.0019 |
| S03 | 0.1921 | 0.4538 | 0.0002 | 0.0001 | 0.0003 | 0.0006 | 0.0007 | 0.0008 | 0.0010 | 0.0013 | 0.0015 | 0.0017 |
| S04 | 0.1923 | 0.4539 | 0.0001 | 0.0001 | 0.0003 | 0.0005 | 0.0006 | 0.0007 | 0.0009 | 0.0011 | 0.0014 | 0.0016 |
| S05 | 0.192 | 0.4540 | 0.0002 | 0.0002 | 0.0004 | 0.0007 | 0.0008 | 0.0009 | 0.0011 | 0.0013 | 0.0016 | 0.0016 |
| S06 | 0.1924 | 0.4542 | 0.0002 | 0.0002 | 0.0004 | 0.0006 | 0.0008 | 0.0008 | 0.0010 | 0.0012 | 0.0014 | 0.0013 |
| S07 | 0.1926 | 0.4544 | 0.0002 | 0.0002 | 0.0004 | 0.0006 | 0.0008 | 0.0008 | 0.0010 | 0.0012 | 0.0014 | 0.0013 |
| S08 | 0.1924 | 0.4540 | 0.0001 | 0.0001 | 0.0002 | 0.0004 | 0.0006 | 0.0007 | 0.0009 | 0.0011 | 0.0013 | 0.0019 |
| S09 | 0.1929 | 0.4544 | 0.0002 | 0.0001 | 0.0003 | 0.0006 | 0.0007 | 0.0008 | 0.0010 | 0.0013 | 0.0015 | 0.0017 |
| S10 | 0.1919 | 0.4541 | 0.0001 | 0.0001 | 0.0003 | 0.0005 | 0.0006 | 0.0007 | 0.0009 | 0.0011 | 0.0014 | 0.0016 |
| S11 | 0.1908 | 0.4566 | 0.0002 | 0.0002 | 0.0004 | 0.0007 | 0.0008 | 0.0009 | 0.0011 | 0.0013 | 0.0016 | 0.0016 |
| S12 | 0.1906 | 0.4563 | 0.0002 | 0.0002 | 0.0004 | 0.0006 | 0.0008 | 0.0008 | 0.0010 | 0.0012 | 0.0014 | 0.0013 |
| S13 | 0.1904 | 0.4566 | 0.0001 | 0.0001 | 0.0003 | 0.0006 | 0.0007 | 0.0005 | 0.0008 | 0.0010 | 0.0012 | 0.0016 |
| S14 | 0.191 | 0.4568 | 0.0002 | 0.0001 | 0.0003 | 0.0006 | 0.0007 | 0.0008 | 0.0010 | 0.0013 | 0.0015 | 0.0017 |
| S15 | 0.1913 | 0.4568 | 0.0001 | 0.0001 | 0.0003 | 0.0005 | 0.0006 | 0.0007 | 0.0009 | 0.0011 | 0.0014 | 0.0016 |
| S16 | 0.1907 | 0.4565 | 0.0002 | 0.0002 | 0.0004 | 0.0007 | 0.0008 | 0.0009 | 0.0011 | 0.0013 | 0.0016 | 0.0016 |
| S17 | 0.1907 | 0.4563 | 0.0002 | 0.0002 | 0.0004 | 0.0006 | 0.0008 | 0.0008 | 0.0010 | 0.0012 | 0.0014 | 0.0013 |
| S18 | 0.1909 | 0.4566 | 0.0001 | 0.0001 | 0.0003 | 0.0006 | 0.0007 | 0.0005 | 0.0008 | 0.0010 | 0.0012 | 0.0016 |
| S19 | 0.1907 | 0.4564 | 0.0002 | 0.0002 | 0.0004 | 0.0006 | 0.0007 | 0.0008 | 0.0011 | 0.0013 | 0.0016 | 0.0016 |
| S20 | 0.1903 | 0.4565 | 0.0002 | 0.0002 | 0.0004 | 0.0006 | 0.0007 | 0.0006 | 0.0008 | 0.0010 | 0.0012 | 0.0017 |
| S21 | 0.1922 | 0.4554 | 0.0002 | 0.0002 | 0.0004 | 0.0006 | 0.0008 | 0.0008 | 0.0010 | 0.0012 | 0.0014 | 0.0013 |
| S22 | 0.1928 | 0.4557 | 0.0001 | 0.0001 | 0.0003 | 0.0006 | 0.0007 | 0.0005 | 0.0008 | 0.0010 | 0.0012 | 0.0016 |
| S23 | 0.1922 | 0.4551 | 0.0002 | 0.0002 | 0.0004 | 0.0006 | 0.0007 | 0.0008 | 0.0011 | 0.0013 | 0.0016 | 0.0016 |
| S24 | 0.1925 | 0.4556 | 0.0002 | 0.0002 | 0.0004 | 0.0006 | 0.0007 | 0.0006 | 0.0008 | 0.0010 | 0.0012 | 0.0017 |
| S25 | 0.1917 | 0.4553 | 0.0002 | 0.0002 | 0.0004 | 0.0007 | 0.0008 | 0.0009 | 0.0011 | 0.0013 | 0.0016 | 0.0017 |
| Average | 0.1917 | 0.4553 | 0.0002 | 0.0002 | 0.0003 | 0.0006 | 0.0007 | 0.0007 | 0.0010 | 0.0012 | 0.0014 | 0.0016 |
| Median | 0.1920 | 0.4554 | 0.0002 | 0.0002 | 0.0004 | 0.0006 | 0.0007 | 0.0008 | 0.0010 | 0.0012 | 0.0014 | 0.0016 |
| Std.dev | 0.0008 | 0.0011 | 0.0000 | 0.0000 | 0.0001 | 0.0001 | 0.0001 | 0.0001 | 0.0001 | 0.0001 | 0.0001 | 0.0002 |
| Max | 0.1929 | 0.4568 | 0.0002 | 0.0002 | 0.0004 | 0.0007 | 0.0008 | 0.0009 | 0.0012 | 0.0014 | 0.0016 | 0.0019 |
| Min | 0.1903 | 0.4538 | 0.0001 | 0.0001 | 0.0002 | 0.0004 | 0.0006 | 0.0005 | 0.0008 | 0.0010 | 0.0012 | 0.0013 |

## 4.Test Equipment

| Equipment Name | Manufacturer | Model No. | Equipment No. | Calibration Due Date |
|---|---|---|---|---|
| 2m Integating Sphere | SENSING | SL-300 | AOC-S-126 | 2026-04-13 |
| Horizontal Distribution Photometer | SENSING | GMS1800D | AOC-S-124 | 2026-04-13 |
| Standard Lamp | SENSING | 240V/150W | AOC-S-151 | 2025-08-01 |
| Digital power meter | HENGHE | WT310E | AOC-S-012 | 2026-04-13 |
| Digital power meter | SENSING | UI2008 | AOC-S-123 | 2026-04-13 |
| Digital power meter | SENSING | UI2021 | AOC-S-123 | 2026-04-13 |
| DC source | OYHS | OYHS-Z120V-50A | AOC-S-062 | 2026-04-13 |
| Variable frequency power supply | WOSEN | BP6005 | AOC-S-129 | 2026-04-13 |
| Variable frequency power supply | AIPUSI | KDF-500 | AOC-S-130 | 2026-04-13 |
| Oscilloscope | TEKTRONIX | MDO3012 | AOC-S-028 | 2026-04-13 |

# Photo Document

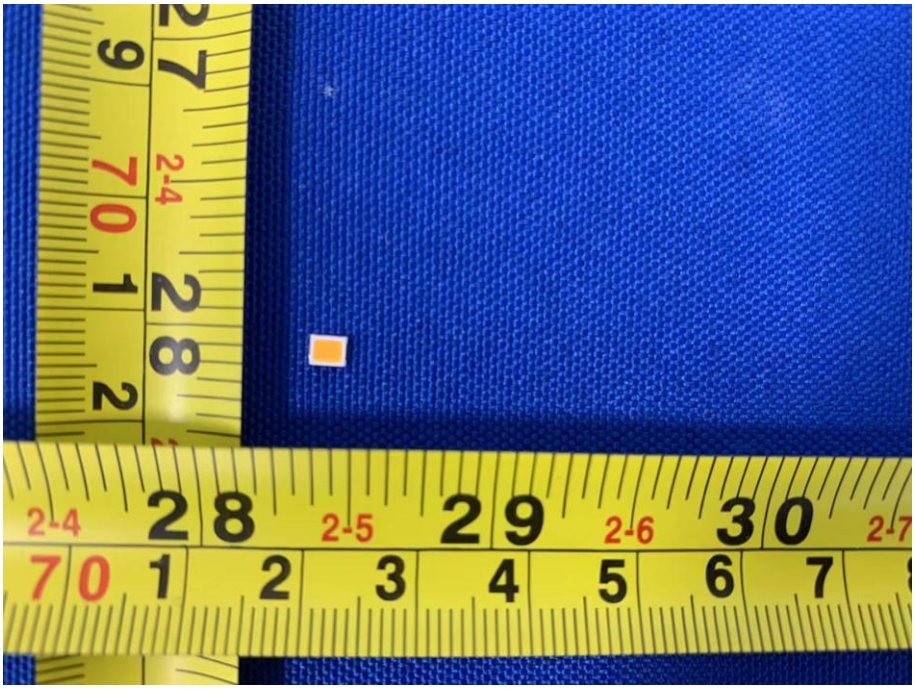



Fig.1 (2700K)


Fig.2 (3000K)

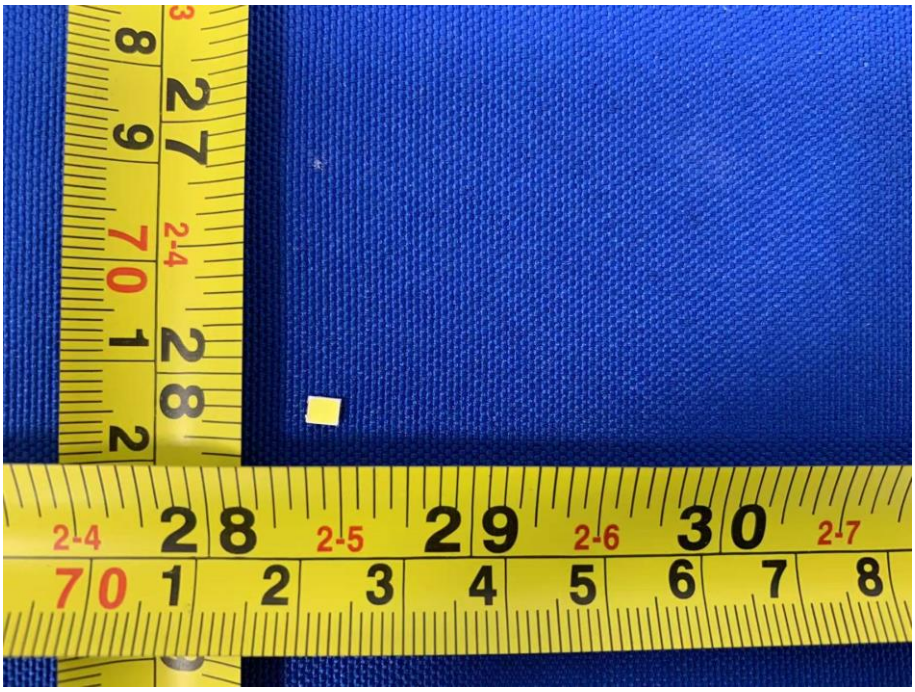



Fig.3 (6500K)

-- End of Report --

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