






TEST REPORT

Kunde: <i>Client:</i>	Aurora (Shanghai) Technology Co., Ltd
Adresse: <i>Address:</i>	Room 221, 2F, Building 6, No.7001, Zhongchun Road, Minhang District, Shanghai
Hersteller: <i>Manufacturer:</i>	Aurora (Shanghai) Technology Co., Ltd
Adresse: <i>Address:</i>	Room 221, 2F, Building 6, No.7001, Zhongchun Road, Minhang District, Shanghai
Name der Marke: <i>Brand Name:</i>	N/A
Beschreibung des Produkts: <i>Product Description:</i>	LED Point Light
Modelle: <i>Models:</i>	PP0003-LED1.8M-RGBW-85D
Bewertung: <i>Rating:</i>	DC24V, 1.8W
Verfahren: <i>Method:</i>	ANSI/UL 1598-2008, Sections 19
Prüfergebnis*: <i>Test result*:</i>	Pass

Datum der Prüfung: <i>Date of Test:</i>	Datum der Emission: <i>Date of Issue:</i>	Klassifizierung: <i>Classification:</i>	Gegenstand der Prüfung: <i>Test item:</i>
2022-06-22	2022-06-27	Commission Test	ISTMT+TM21 Test

Prüflabor (Testlabor) / Testing Laboratory:
Shenzhen Southern LCS Compliance Testing Laboratory Ltd.

Test von/Test by:  Yeoh Zhang/ Project Engineer	Check von/Check by:  Torres He/ Director	Genehmigt von/Approved by:  Jesse Liu/ Manager
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Modified Information

Version	Report No.	Revision Date	Summary
V1.0	LCSB051622083S	/	Original Version

General product information:

Measurement was conducted at a stable ambient temperature 25°C±1°C
 Only LED No. W1 and W2 are considered in this report.

Model List:

Item	Model	Rating
1	PP0003-LED1.8M-RGBW-85D	DC24V, 1.8W

LED specification:

Model/Series	Manufacturer	VF (V)	IF (mA)
PP0003-LED1.8M-RGB W-85D	Aurora (Shanghai) Technology Co., Ltd	9	100

Equipment list:

Equipment No.	Equipment Name	Specification data	Cal. Date
SLCS-S-004	Digital Power Meter	YOKOGAWA/ WT210 / 91L424211	2022.5.10
SLCS-S-011	Thermocouple	DE AO/J	2022.5.10
SLCS-S-036	Temperature recorder	AGILENT/ 34970A	2022.5.10





1. GENERAL INFORMATION

1.1 Product Information

Information of product:	
Product description	LED Point Light
Model Number	PP0003-LED1.8M-RGBW-85D
Manufacturer of LED Driver	--
LED Driver models	--
Rated Inputs	DC24V
Rated Power	1.8W
Declared CCT.	4000K
LED Package, Array or Module	2S1P, total 2 pcs LED chip(s)
Date of Receipt Samples	2022-06-22
Quantity of Receipt Samples	1 unit
Information of LED chip:	
LED Chip Manufacturer	Aurora (Shanghai) Technology Co., Ltd
LED type	--
Model of the LED chip(s)	PP0003-LED1.8M-RGBW-85D
Forward voltage of the LED chip	9V
Forward current of the LED chip	100mA
ISTMT temperature of the LED chip	105°C
IES LM-80 Test Report	Report No.:LCS210303112BS Issue Date: 2022-06-23 Tested and Prepared by: Shenzhen Southern LCS Compliance Testing Laboratory Ltd.





1.2 Reference Standards or Methods

The following standards are partly or totally used or referenced for test

Standard	Method
ANSI/UL 1598: 2008	In-Situ Temperature Measurement Test is conducted according to the ANSI/UL 1598-2008, Sections 19.7, 19.10-16. The testing was conducted in a room with ambient temperature of 25°C±5°C. The apparatus construction followed those described in UL1598-2008 for normal temperature testing. Thermocouples were placed on the LED package and LED driver in the locations indicated by LM-80 report and driver . The temperature was recorded after the lamp was operating for a minimum of 7.5 hours.

2. Test Result of ISTMT

2.1 Electrical data

Criteria Item	Result
Input voltage	--
Input current	--
Total power	--
Power factor	--
Current on each LED module	--
Remark: --	

2.2 Temperature data

Ambient Temperature, °C :	25±1°C	Relative Humidity, %Rh :	45%Rh~70%Rh	
Supply voltage:	DC24V	Type of thermocouples:	J	
Test Product Model	PP0003-LED1.8M-RGBW-85D			
Test LED Model	PP0003-LED1.8M-RGBW-85D			
Test LED Driver Model	--			
Test Duration	≥3.5Hours			
Item	Parts	Test Result (°C)	Revise to ta. (°C)	Limit (°C)
1	Measured maximum Temperature @ TEMLED	41.5	41.4	105
2	Ambient	25.1	25.0	--



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Scan code to check authenticity



3. Lumen Maintenance Projection (IESNA TM-21-11 Method)

3.1 LM-80 report summary for LED chip(s)

Manufactured by	Aurora (Shanghai) Technology Co., Ltd		
LED Model	PP0003-LED1.8M-RGBW-85D		
Number of LED light source tested	25units		
Drive Current	100mA		
Case temperature	55°C	85°C	105°C
9000 hours lumen maintenance	97.49%	97.08%	96.58%
9000 hours color maintenance ($\Delta u'v'$)	0.0029	0.0032	0.0035

3.2 Lumen Maintenance Projection for luminaires

Criteria Item	Result
50000h at which to estimate lumen maintenance	85.44%
Drive current on each LED light source	100mA
Reported L ₇₀ lumen maintenance life	>54000 hours
Reported L ₈₀ lumen maintenance life	>54000 hours
Reported L ₉₀ lumen maintenance life	34000 hours





TM-21 Inputs



Instructions

Yellow fields are completed by the user. Fields not used should be left blank. Cyan fields are calculated based on user entries.

First, enter a description of the LED light source tested. Then complete the fields labeled "LM-80 Testing Details". Test duration must be at least 6,000 hours. If only one case temperature data set is to be used (no interpolation), complete only "Tested case temperature 1". For only two case temperature data sets, complete 1 and 2.

Next, further to the right, in the corresponding box(es) for each tested case temperature, enter the test data along with the time (in hours) at which each measurement was taken. Data entered must be normalized then averaged measured data (per TM-21 sections 5.2.1 and 5.2.2). If case temperatures have different test durations, enter data up to the lowest of the test durations for all of the case temperatures.

Enter drive current, *in-situ* temperature data and the percentage of initial lumens to project to in the fields labeled "In-Situ Inputs".

Results can be tailored to estimate lumen maintenance at a specific time by entering a value (t) in the yellow field. A complete TM-21 report will appear on the next tab labeled "Report".

Description of LED Light Source Tested (manufacturer, model, catalog number)	
Aurora (Shanghai) Technology Co., Ltd PP0003-LED1.8M-RGBW-85D	

LM-80 Testing Details	
Total number of units tested per case temperature:	25
Number of failures:	0
Number of units measured:	25
Test duration (hours):	9000
Tested drive current (mA):	100
Tested case temperature 1 (T _c , °C):	55
Tested case temperature 2 (T _c , °C):	85
Tested case temperature 3 (T _c , °C):	105

In-Situ Inputs	
Drive current for each LED package/array/module (mA):	100
In-situ case temperature (T _{in-situ} , °C):	41.4
Percentage of initial lumens to project to (e.g. for L ₇₀ , enter 70):	70

Results	
Time (t) at which to estimate lumen maintenance (hours):	50,000
Lumen maintenance at time (t) (%):	85.44%
Reported L70 (hours):	>54000

LM-80 Test Inputs

Test Data for 55°C Case Temperature		Test Data for 85°C Case Temperature		Test Data for 105°C Case Temperature	
Time (hours)	Lumen Maintenance (%)	Time (hours)	Lumen Maintenance (%)	Time (hours)	Lumen Maintenance (%)
1000	100.11%	1000	100.02%	1000	99.97%
2000	99.98%	2000	99.89%	2000	99.47%
3000	99.48%	3000	99.27%	3000	98.87%
4000	99.09%	4000	98.81%	4000	98.51%
5000	98.75%	5000	98.58%	5000	98.27%
6000	98.36%	6000	98.16%	6000	97.92%
7000	98.12%	7000	97.93%	7000	97.48%
8000	97.81%	8000	97.57%	8000	97.14%
9000	97.49%	9000	97.08%	9000	96.58%



TM-21 Report

Description of LED Light Source Tested (manufacturer, model, catalog number)	Table 1: Report at each LM-80 Test Condition					
	Test Condition 1 - 55°C Case Temp		Test Condition 2 - 85°C Case Temp		Test Condition 3 - 105°C Case Temp	
Aurora (Shanghai) Technology Co., Ltd PP0003-LED1.8M-RGBW-85D	Sample size	25	Sample size	25	Sample size	25
	Number of failures	0	Number of failures	0	Number of failures	0
	DUT drive current used in the test (mA)	100	DUT drive current used in the test (mA)	100	DUT drive current used in the test (mA)	100
	Test duration (hours)	9,000	Test duration (hours)	9,000	Test duration (hours)	9,000
	Test duration used for projection (hour to hour)	4,000 - 9,000	Test duration used for projection (hour to hour)	4,000 - 9,000	Test duration used for projection (hour to hour)	4,000 - 9,000
	Tested case temperature (°C)	55	Tested case temperature (°C)	85	Tested case temperature (°C)	105
	α	3.215E-06	α	3.473E-06	α	3.947E-06
	B	1.003	B	1.003	B	1.002
Reported L70(9k) (hours)	>54000	Reported L70(9k) (hours)	>54000	Reported L70(9k) (hours)	>54000	

Table 2: Interpolation Report (projection based on in-situ temperature entered)	
T _{in1} (°C)	55.00
T _{in1} (K)	328.15
α ₁	3.215E-06
B ₁	1.003
T _{in2} (°C)	-
T _{in2} (K)	-
α ₂	-
B ₂	-
E _a /k _B	-
A	-
B ₀	1.003
T _{in} (°C)	41.40
T _{in} (K)	314.55
α _i	3.215E-06
Reported L70(9k) at 41.4°C (hours)	>54000





TM-21 Inputs

Instructions

Yellow fields are completed by the user. Fields not used should be left blank. Cyan fields are calculated based on user entries.

First, enter a description of the LED light source tested. Then complete the fields labeled "LM-80 Testing Details". Test duration must be at least 6,000 hours. If only one case temperature data set is to be used (no interpolation), complete only "Tested case temperature 1". For only two case temperature data sets, complete 1 and 2.

Next, further to the right, in the corresponding box(es) for each tested case temperature, enter the test data along with the time (in hours) at which each measurement was taken. Data entered must be normalized then averaged measured data (per TM-21 sections 5.2.1 and 5.2.2). If case temperatures have different test durations, enter data up to the lowest of the test durations for all of the case temperatures.

Enter drive current, *in-situ* temperature data and the percentage of initial lumens to project to in the fields labeled "In-Situ Inputs".

Results can be tailored to estimate lumen maintenance at a specific time by entering a value (t) in the yellow field. A complete TM-21 report will appear on the next tab labeled "Report".

Description of LED Light Source Tested (manufacturer, model, catalog number)	
Aurora (Shanghai) Technology Co., Ltd PP0003-LED1.8M-RGBW-85D	

LM-80 Testing Details	
Total number of units tested per case temperature:	25
Number of failures:	0
Number of units measured:	25
Test duration (hours):	9000
Tested drive current (mA):	100
Tested case temperature 1 (T _c , °C):	55
Tested case temperature 2 (T _c , °C):	85
Tested case temperature 3 (T _c , °C):	105

In-Situ Inputs	
Drive current for each LED package/array/module (mA):	100
In-situ case temperature (T _{in-situ} , °C):	41.4
Percentage of initial lumens to project to (e.g. for L ₇₀ , enter 70):	80

Results	
Time (t) at which to estimate lumen maintenance (hours):	50,000
Lumen maintenance at time (t) (%):	85.44%
Reported L80 (hours):	>54000

LM-80 Test Inputs					
Test Data for 55°C Case Temperature		Test Data for 85°C Case Temperature		Test Data for 105°C Case Temperature	
Time (hours)	Lumen Maintenance (%)	Time (hours)	Lumen Maintenance (%)	Time (hours)	Lumen Maintenance (%)
1000	100.11%	1000	100.02%	1000	99.97%
2000	99.98%	2000	99.89%	2000	99.47%
3000	99.48%	3000	99.27%	3000	98.87%
4000	99.09%	4000	98.81%	4000	98.51%
5000	98.75%	5000	98.58%	5000	98.27%
6000	98.36%	6000	98.16%	6000	97.92%
7000	98.12%	7000	97.93%	7000	97.48%
8000	97.81%	8000	97.57%	8000	97.14%
9000	97.49%	9000	97.08%	9000	96.58%



TM-21 Report

Description of LED Light Source Tested (manufacturer, model, catalog number)	Table 1: Report at each LM-80 Test Condition					
	Test Condition 1 - 55°C Case Temp		Test Condition 2 - 85°C Case Temp		Test Condition 3 - 105°C Case Temp	
Aurora (Shanghai) Technology Co., Ltd PP0003-LED1.8M-RGBW-85D	Sample size	25	Sample size	25	Sample size	25
	Number of failures	0	Number of failures	0	Number of failures	0
	DUT drive current used in the test (mA)	100	DUT drive current used in the test (mA)	100	DUT drive current used in the test (mA)	100
	Test duration (hours)	9,000	Test duration (hours)	9,000	Test duration (hours)	9,000
	Test duration used for projection (hour to hour)	4,000 - 9,000	Test duration used for projection (hour to hour)	4,000 - 9,000	Test duration used for projection (hour to hour)	4,000 - 9,000
	Tested case temperature (°C)	55	Tested case temperature (°C)	85	Tested case temperature (°C)	105
	α	3.215E-06	α	3.473E-06	α	3.947E-06
	B	1.003	B	1.003	B	1.002
	Reported L80(9k) (hours)	>54000	Reported L80(9k) (hours)	>54000	Reported L80(9k) (hours)	>54000

Table 2: Interpolation Report (projection based on in-situ temperature entered)	
T _{sk1} (°C)	55.00
T _{sk1} (K)	328.15
α ₁	3.215E-06
B ₁	1.003
T _{sk2} (°C)	-
T _{sk2} (K)	-
α ₂	-
B ₂	-
E _a /k _B	-
A	-
B ₀	1.003
T _{sk} (°C)	41.40
T _{sk} (K)	314.55
α _i	3.215E-06
Reported L80(9k) at 41.4°C (hours)	>54000





TM-21 Inputs



Instructions

Yellow fields are completed by the user. Fields not used should be left blank. Cyan fields are calculated based on user entries.

First, enter a description of the LED light source tested. Then complete the fields labeled "LM-80 Testing Details". Test duration must be at least 6,000 hours. If only one case temperature data set is to be used (no interpolation), complete only "Tested case temperature 1". For only two case temperature data sets, complete 1 and 2.

Next, further to the right, in the corresponding box(es) for each tested case temperature, enter the test data along with the time (in hours) at which each measurement was taken. Data entered must be normalized then averaged measured data (per TM-21 sections 5.2.1 and 5.2.2). If case temperatures have different test durations, enter data up to the lowest of the test durations for all of the case temperatures.

Enter drive current, *in-situ* temperature data and the percentage of initial lumens to project to in the fields labeled "In-Situ Inputs".

Results can be tailored to estimate lumen maintenance at a specific time by entering a value (t) in the yellow field. A complete TM-21 report will appear on the next tab labeled "Report".

Description of LED Light Source Tested (manufacturer, model, catalog number)	
Aurora (Shanghai) Technology Co., Ltd PP0003-LED1.8M-RGBW-85D	

LM-80 Testing Details	
Total number of units tested per case temperature:	25
Number of failures:	0
Number of units measured:	25
Test duration (hours):	9000
Tested drive current (mA):	100
Tested case temperature 1 (T _c , °C):	55
Tested case temperature 2 (T _c , °C):	85
Tested case temperature 3 (T _c , °C):	105

In-Situ Inputs	
Drive current for each LED package/array/module (mA):	100
In-situ case temperature (T _{in-situ} , °C):	41.4
Percentage of initial lumens to project to (e.g. for L ₇₀ , enter 70):	90

Results	
Time (t) at which to estimate lumen maintenance (hours):	50,000
Lumen maintenance at time (t) (%):	85.44%
Reported L90 (hours):	34,000

LM-80 Test Inputs

Test Data for 55°C Case Temperature		Test Data for 85°C Case Temperature		Test Data for 105°C Case Temperature	
Time (hours)	Lumen Maintenance (%)	Time (hours)	Lumen Maintenance (%)	Time (hours)	Lumen Maintenance (%)
1000	100.11%	1000	100.02%	1000	99.97%
2000	99.98%	2000	99.89%	2000	99.47%
3000	99.48%	3000	99.27%	3000	98.87%
4000	99.09%	4000	98.81%	4000	98.51%
5000	98.75%	5000	98.58%	5000	98.27%
6000	98.36%	6000	98.16%	6000	97.92%
7000	98.12%	7000	97.93%	7000	97.48%
8000	97.81%	8000	97.57%	8000	97.14%
9000	97.49%	9000	97.08%	9000	96.58%



TM-21 Report

Description of LED Light Source Tested (manufacturer, model, catalog number)	Table 1: Report at each LM-80 Test Condition					
	Test Condition 1 - 55°C Case Temp		Test Condition 2 - 85°C Case Temp		Test Condition 3 - 105°C Case Temp	
Aurora (Shanghai) Technology Co., Ltd PP0003-LED1.8M-RGBW-85D	Sample size	25	Sample size	25	Sample size	25
	Number of failures	0	Number of failures	0	Number of failures	0
	DUT drive current used in the test (mA)	100	DUT drive current used in the test (mA)	100	DUT drive current used in the test (mA)	100
	Test duration (hours)	9,000	Test duration (hours)	9,000	Test duration (hours)	9,000
	Test duration used for projection (hour to hour)	4,000 - 9,000	Test duration used for projection (hour to hour)	4,000 - 9,000	Test duration used for projection (hour to hour)	4,000 - 9,000
	Tested case temperature (°C)	55	Tested case temperature (°C)	85	Tested case temperature (°C)	105
	α	3.215E-06	α	3.473E-06	α	3.947E-06
	B	1.003	B	1.003	B	1.002
	Reported L90(9k) (hours)	34,000	Reported L90(9k) (hours)	31,000	Reported L90(9k) (hours)	27,000

Table 2: Interpolation Report (projection based on in-situ temperature entered)	
T _{in} (°C)	55.00
T _{in} (K)	328.15
α ₁	3.215E-06
B ₁	1.003
T _{in2} (°C)	-
T _{in2} (K)	-
α ₂	-
B ₂	-
E _a /k _B	-
A	-
B ₀	1.003
T _{in} (°C)	41.40
T _{in} (K)	314.55
α ₁	3.215E-06
Reported L90(9k) at 41.4°C (hours)	34,000



4. Photos

4.1 Thermocouple contact photo of @ TEM_{LED}

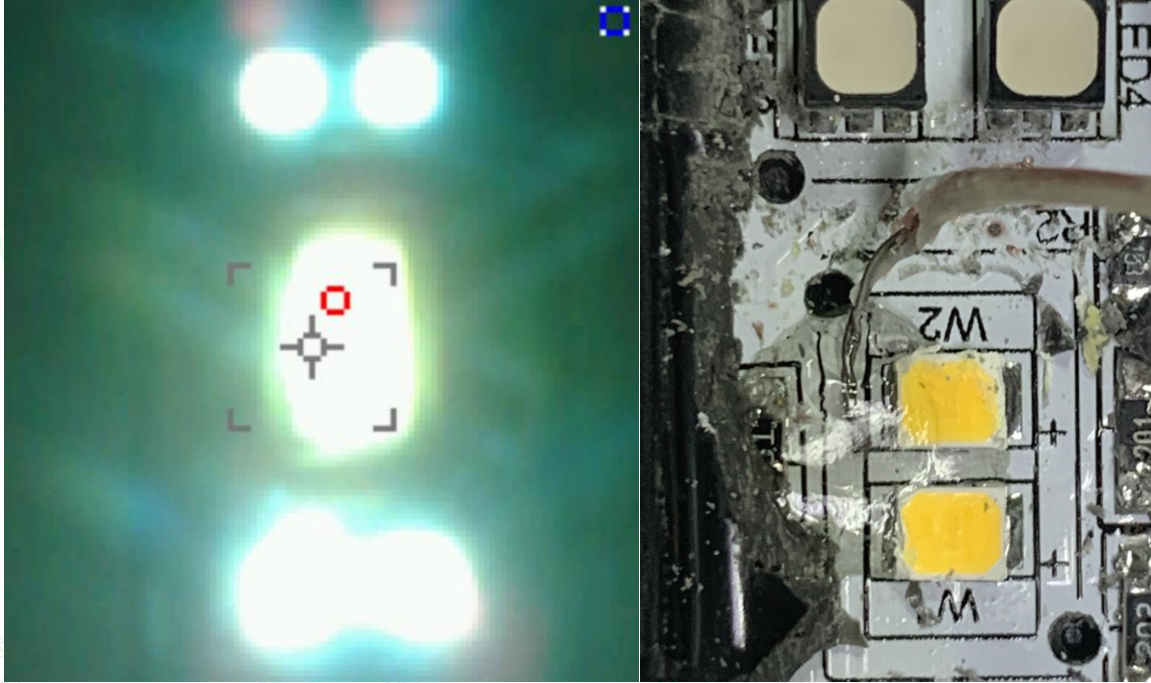


Figure 1



Figure 2



4.2 Product Photos



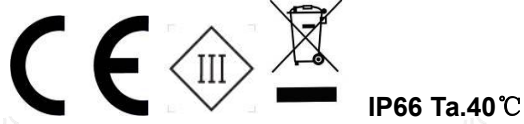
Photo 1



Photo 2



LED Point Light
Model: PP0003-LED1.8M-RGBW-85D
DC24V, 1.8W



Aurora (Shanghai) Technology Co., Ltd
Room 221, 2F, Building 6, No.7001, Zhongchun Road,
Minhang District, Shanghai

Importer: xxxxxxxx

Address: xxxxxxxx

MADE IN CHINA

Photo 3 Label of the light

----- End of test report -----

