

Visual Comfort & Co.

TEST REPORT

SCOPE OF WORK

LM-79 testing report

REPORT NUMBER

240621176GZU-018

ISSUE DATE

08 October 2024

REVISION DATE

Modification 1: 06 November 2024

NUMBER OF PAGES

13

DOCUMENT CONTROL NUMBER

Report format for LM-79_G

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Report No.: 240621176GZU-018
Modification 1: 06 November 2024

TEST REPORT

TEST OF ONE LED LUMINAIRE

MODEL NO. SLCH24827XX

Remark: "XX" are denoted appearance color.

RENDERED TO

Visual Comfort & Co.

Contact Name: Adam Same

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<u>TEST:</u>	Electrical and Photometric as required to the IES LM-79 test standard.
<u>AUTHORIZATION:</u>	The testing performed was authorized by signed quote number: QGZ240620045.
<u>STANDARDS USED:</u>	The following American National Standards or Illuminating Engineering Society of North America Test Guides were used in part or totally to test each specimen:
IES LM-79-19	Approved Method for the Electrical and Photometric Measurements of Solid-State Lighting Products
ANSI C78.377-2017 (R2022)	Specifications of the Chromaticity of Solid State Lighting Products
<u>DESCRIPTION OF SAMPLE:</u>	The client submitted one sample of model SLCH24827XX. The sample was received by Intertek in undamaged condition and tested as received. The sample designation was S240621176-016.
<u>MANUFACTURER /FACTORY & ADDRESS:</u>	Guangzhou Xiongyi Precision Metalworking Co., Ltd Hantang Industrial Zone, Langbian Village, Shiji Town, Panyu District, Guangzhou City, Guangdong Province, China 511450
<u>DATES OF TESTS:</u>	03 September 2024
<u>ISSUED BY:</u>	Intertek Testing Services Shenzhen Ltd. Guangzhou Branch
<u>TEST LOCATION:</u>	Room101/301/401/102/202/302/402/502/602/702/802, No. 7-2, Caipin Road, Huangpu District, Guangzhou, Guangdong, China

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TEST REPORT

SUMMARY

Model Number:	SLCH24827XX
Description:	LED Luminaries
Brand Name:	--

Test Condition: 120V, 60Hz For SLCH24827XX

Criteria	Result
Total Lumen Output	4401.2 lm
Total Power	79.9 W
Luminaire Efficacy	55.1 lm/W
S/MH(C0/180)	1.43
S/MH(C90/270)	1.28
Correlated Color Temperature (CCT)	2620 K
Color Rendering Index (CRI)	94
R9	71
Chromaticity Coordinate (x)	0.4662
Chromaticity Coordinate (y)	0.4115
Chromaticity Coordinate (u')	0.2662
Chromaticity Coordinate (v')	0.5287

Remark:

Revision history:

Modification 1: Based on and superseded the previous report 240621176GZU-018 issued on 08 October 2024, correct the manufacturer information on page 2 of the report, correct the applicant name on page 1 and 2 of the report.

***** End of Page *****

TEST REPORT

EQUIPMENT LIST

Equipment Used	Model Number	Control Number
Goniophotometer System	Go-R5000	SA063-16
KONICA MINOLTA - Illuminance meter	CX-2B_WL	SA063-16-01
Standard Lamp	D215S	SA063-16-06
Digital Power Meter	PLM3000	SA063-16-09
AC power source for Goniophotometer	PCR-1000WH	SA063-16-10
Temperature Meter	S500-TH	SA047-182

GENERAL REMARK

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When determining for test conclusion, measurement uncertainty of tests has been considered.

Throughout this report a ☐ comma ☒ point is used as the decimal separator.

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TEST REPORT

TEST METHOD

Seasoning in Sample Orientation – LED Products

No seasoning was performed in accordance with IES LM-79

Light Distribution and Output Measurements

Light Distribution and total light output (luminous flux) were measured using a Go-R5000 Type-C Rotating Mirror Goniophotometer. Temperature 25°C and relative humidity of 60% was measured at a position in the testing laboratory.

The lamp rotates only around the fixed vertical axle in the prescribed burning position. The lamp and mirror permit the measurement of luminous intensity at the direction of any horizontal or vertical angle without tilting the lamp. The lamp was allowed to stabilize before measurements were made.

Chromaticity Measurements

Chromaticity was measured using a 2 meters integrating sphere spectral lamp measurement system, 4 π geometry, with an interior coating reflectance no less than 95 %. Temperature was measured at a position inside the sphere shielded from direct light. Relative humidity of 65% was measured at a position in the testing laboratory.

Spectral radiant flux measurements were made using spectroradiometer attached to the detector port of the integrating sphere. Each lamp was allowed to stabilise before measurements were made. The calibration of the integrating sphere spectroradiometer system is by the reference/standard lamps which are traceable to National Institute of Metrology P.R. CHINA. Lamp efficacy (lumens per watt) for each lamp model was then computed based on the luminous flux result. Electrical measurements including voltage, power and power factor were measured using YOKOGAWA - Digital Power Meter., model WT310E.

Correction factor (self-absorption) has been considered when doing measurement.

Standard lamp used for Goniophotometer method:

Model: D215S

Current: 4.809A DC

Standard lamp used for integrating sphere:

Model: D204

Current: 3.948A DC

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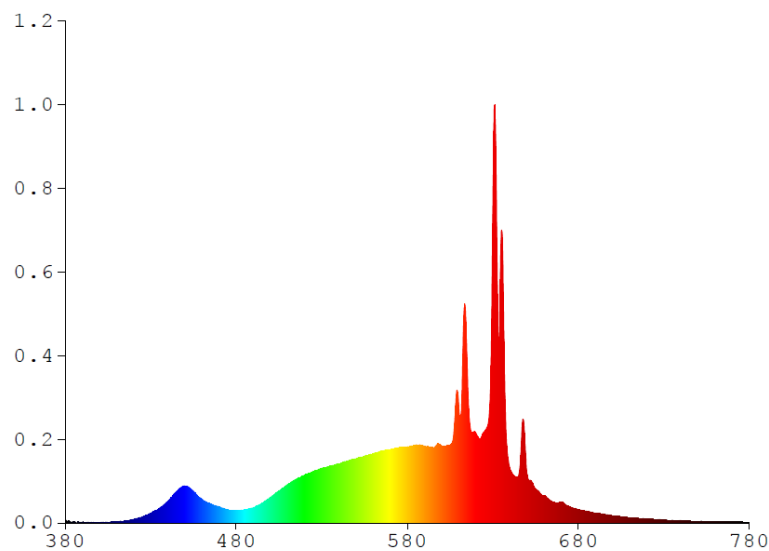
TEST REPORT

RESULTS OF TESTS

Test Condition: 120V, 60Hz For SLCH24827XX

Spectral Distribution over Visible Wavelengths

nm	mW/nm	nm	mW/nm	nm	mW/nm	nm	mW/nm	nm	mW/nm
380	2.6922	480	15.0130	580	93.1430	680	16.3220	780	0.6955
385	0.3120	485	16.1310	585	95.2460	685	14.0960		
390	0.9550	490	18.7860	590	94.0580	690	12.0740		
395	0.8813	495	23.9770	595	92.3470	695	10.4510		
400	0.6682	500	31.4490	600	93.8160	700	8.9955		
405	0.7415	505	39.3910	605	95.7240	705	7.8062		
410	1.2419	510	46.9620	610	141.160	710	6.6470		
415	2.8461	515	53.3300	615	187.110	715	5.7992		
420	4.3573	520	58.4790	620	110.340	720	4.8531		
425	7.4072	525	63.3760	625	112.040	725	4.1675		
430	11.9290	530	67.1710	630	388.520	730	3.7237		
435	17.4970	535	70.0610	635	356.190	735	3.1484		
440	26.3310	540	72.4080	640	65.8330	740	2.6986		
445	38.0980	545	75.9670	645	57.4920	745	2.3969		
450	45.2040	550	78.8320	650	59.3510	750	2.1277		
455	38.5740	555	81.8990	655	41.2010	755	1.8977		
460	28.6110	560	84.9310	660	33.3430	760	1.5991		
465	23.1070	565	88.0590	665	25.8720	765	1.4943		
470	19.5790	570	89.7790	670	26.0540	770	1.2497		
475	16.0870	575	92.3390	675	18.6970	775	1.1547		



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TEST REPORT

RESULTS OF TESTS (cont'd)

Test Condition: 120V, 60Hz For SLCH24827XX

Total operation burning time: 60 minutes
Stabilization time: 30 minutes

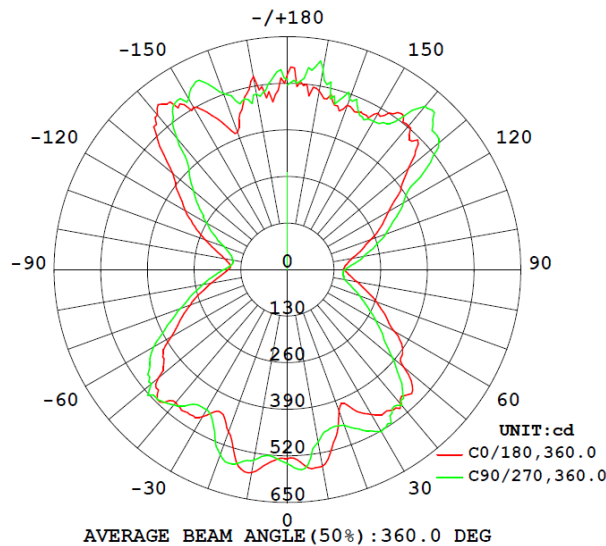
Photometric Measurements at 25°C – Distribution Method

Intertek Sample No.	Base Orientation	Correlated Color Temperature (K)	CRI	R9	CIE 31'	CIE 31'	CIE 76'	CIE 76'
					Chromaticit	Chromaticit	Chromaticit	Chromaticit
					y	y	y	y
					Coordinate	Coordinate	Coordinate	Coordinate
					(x)	(y)	(u')	(v')
SLCH24827XX								
S2406211 76-016	base-up	2620	94	71	0.4662	0.4115	0.2662	0.5287

Photometric and Electrical Measurements at 25°C – Distribution Method

Intertek Sample No.	Base Orientation	Input Voltage (Vac)	Input Current (mA)	Input Power (Watts)	Input Power Factor	Absolute Luminous	Lumen
						Flux (Lumens)	Efficacy (Lumens Per Watt)
SLCH24827XX							
S2406211 76-016	base-up	120.1	673.1	79.9	0.988	4401.2	55.1

Intensity (Candlepower) Summary at 25°C - Candelas



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TEST REPORT

RESULTS OF TESTS (cont'd)

Test Condition: 120V, 60Hz For SLCH24827XX

Intensity (Candlepower) Summary at 25°C - Candelas

V \ H(°)	0	22.5	45	67.5	90
0	527.0	556.3	551.4	543.4	541.6
5	548.7	554.0	546.9	552.3	557.0
10	557.4	496.9	493.9	505.4	489.6
15	498.1	453.6	463.5	433.7	459.2
20	420.2	467.7	475.5	427.0	461.6
25	429.2	492.3	509.8	465.3	494.1
30	466.4	523.4	507.2	490.1	523.1
35	481.8	495.8	491.5	517.3	498.5
40	489.8	450.8	481.4	510.5	495.7
45	489.1	425.2	438.4	442.9	450.7
50	421.0	366.2	393.8	377.6	380.8
55	391.6	321.8	328.6	318.3	325.4
60	342.8	293.9	290.0	277.4	283.9
65	300.9	254.6	252.9	246.1	246.7
70	264.3	215.6	216.9	217.6	213.9
75	227.5	184.1	185.2	184.4	185.4
80	196.2	164.3	157.7	156.5	162.3
85	172.5	152.7	149.8	146.8	155.2
90	159.2	162.8	157.6	157.9	160.1
95	164.4	182.5	183.8	183.6	184.6
100	182.5	204.4	216.5	215.2	215.5
105	214.3	243.9	261.5	255.4	252.7
110	246.6	293.8	301.6	307.4	290.7
115	288.1	336.3	345.5	356.4	327.6
120	325.8	400.3	424.3	426.0	372.6
125	384.4	455.1	486.3	483.8	451.6
130	439.9	517.4	551.9	527.7	550.2
135	512.6	539.9	532.7	573.7	573.7
140	523.8	578.2	530.3	586.1	595.2
145	535.5	565.0	520.2	525.5	498.5
150	504.5	483.2	459.2	478.8	478.8
155	485.1	471.6	474.5	444.9	476.1
160	488.5	531.9	537.5	485.6	507.3
165	486.5	518.8	496.8	525.1	502.6
170	507.5	528.4	523.4	506.4	571.5
175	515.8	495.9	555.8	459.8	536.5
180	546.8	536.2	415.0	503.6	515.7

***** End of Page *****

TEST REPORT

RESULTS OF TESTS (cont'd)

Test Condition: 120V, 60Hz For SLCH24827XX

Zonal Lumen Summary and Percentages at 25°C

Zone	Lumens (lm)	% Luminaire (%)
SLCH24827XX		
0-30	418.7	9.5
0-40	723.3	16.4
0-60	1447.1	32.9
0-90	2196.2	49.9
60-90	749.1	17.0
0-180	4401.2	100.0

Beam Angle

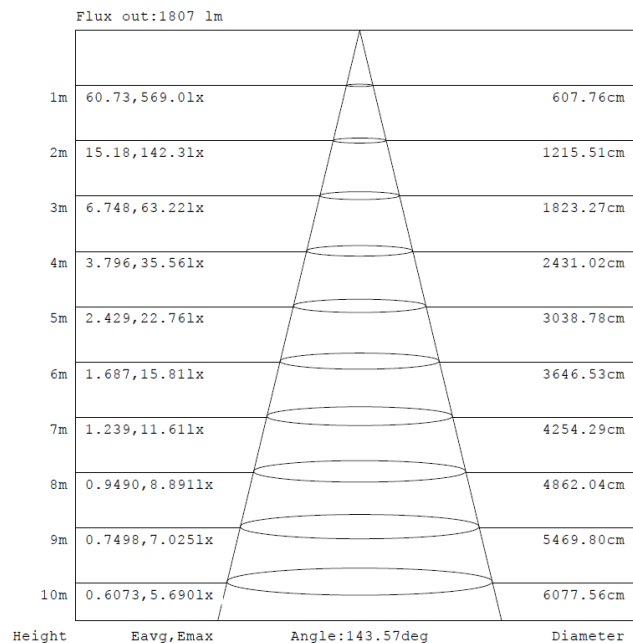
Total Beam Angle(°)
360.0

Illumination Plots

Model No.: SLCH24827XX

Mount Height: 2.5 m

Illuminance - Cone of Light



Note: The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.

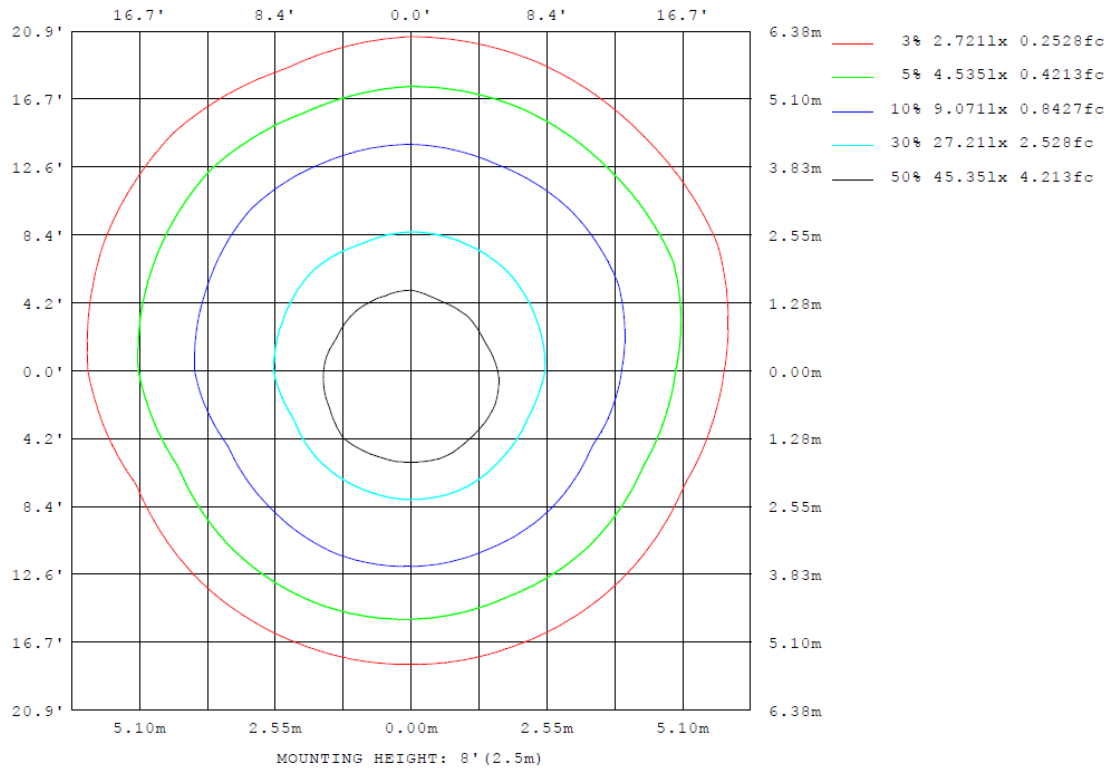
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TEST REPORT

RESULTS OF TESTS (cont'd)

Test Condition: 120V, 60Hz For SLCH24827XX

Model No.: SLCH24827XX
Mount Height: 2.5 m
Isoillumination Plot



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TEST REPORT

RESULTS OF TESTS (cont'd)

Test Condition: 120V, 60Hz For SLCH24827XX

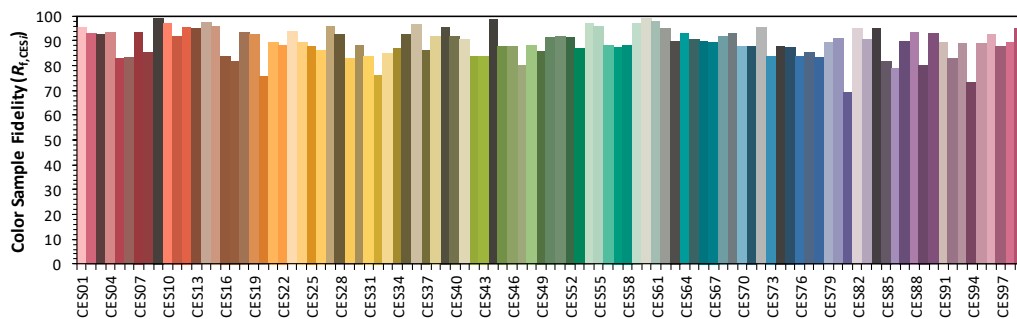
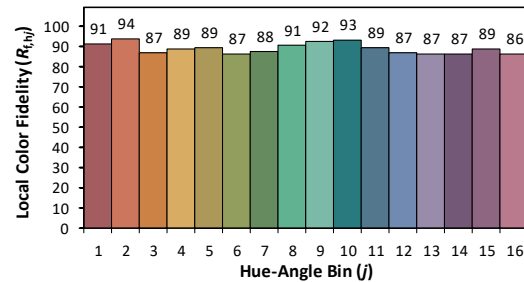
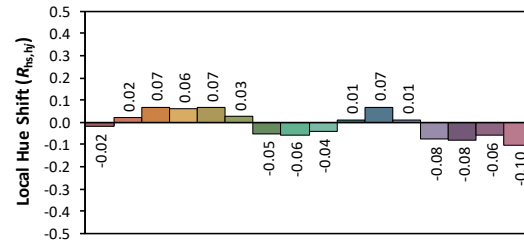
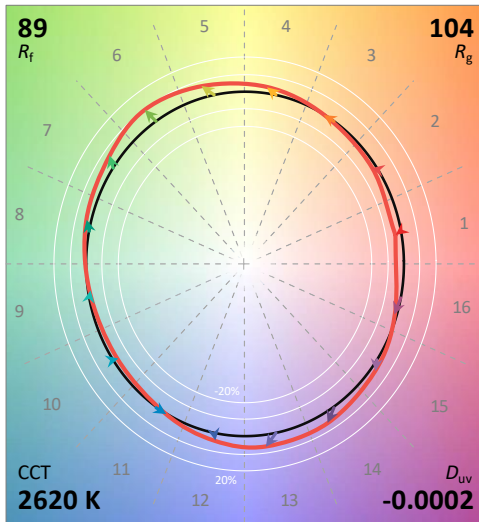
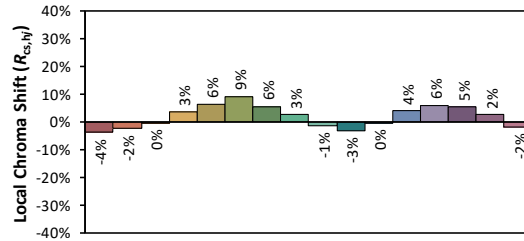
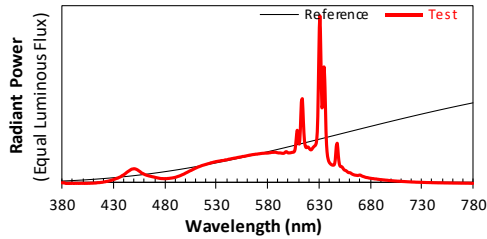
ANSI/IES TM-30-18 Color Rendition Report

Source: User SPD

Manufacturer: Visual Comfort and Company

Date: 2024/9/3

Model: SLCH24827XX



Notes: This is a recommended method for displaying ANSI/IES TM-30-18 information.

x 0.4662
 y 0.4115
 u' 0.2662
 v' 0.5287

CIE 13.3-1995
(CRI)
 R_a 94
 R_g 71

Colors are for visual orientation purposes only. Created with the ANSI/IES TM-30-18 Calculator Version 2.00.

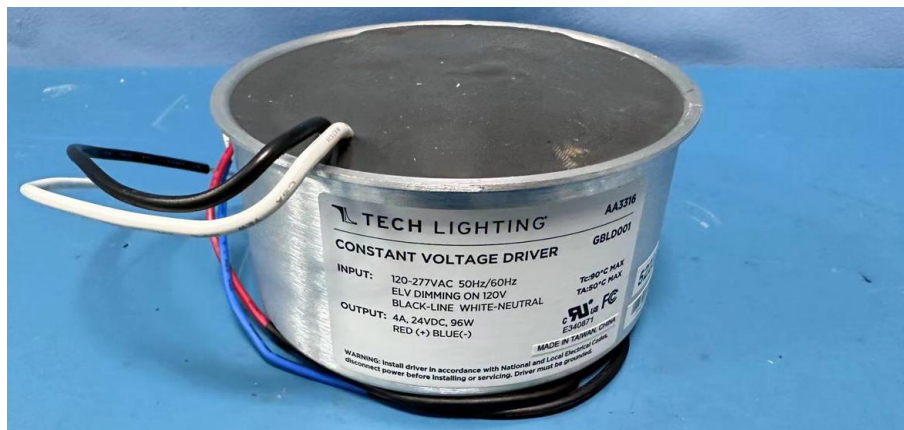
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TEST REPORT

PRODUCT PICTURE (not to scale)



External view of SLCH24827XX

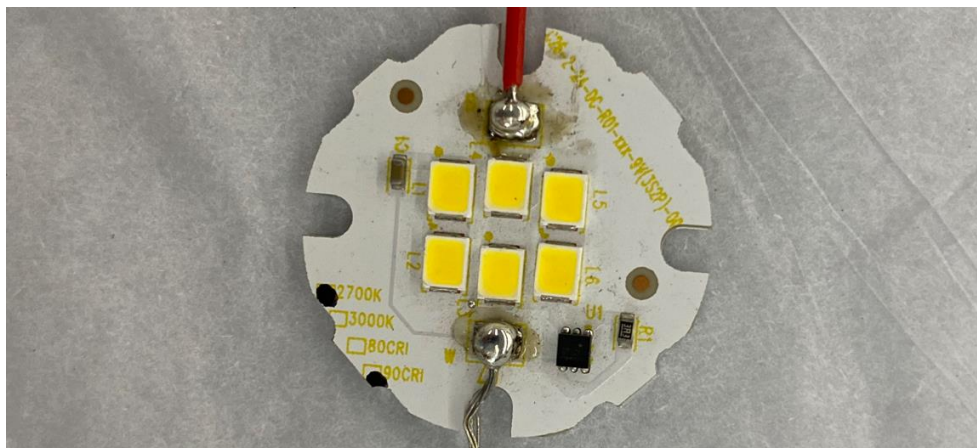


View of LED driver GBLD001

***** End of Page *****

TEST REPORT

PRODUCT PICTURE (not to scale)



View of LED

In Charge Of Tests:

Done Ye

Done Ye
Engineer

Report Reviewed By

Shelley Ying

Shelley Ying
Reviewer

Attachment: None

***** End of Report *****