

Visual Comfort and Company

TEST REPORT

SCOPE OF WORK

LM-79 testing report

REPORT NUMBER

220706027GZU-004

ISSUE DATE

13 July 2022

REVISION DATE

None

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13

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Report No.: 220706027GZU-004

TEST REPORT

TEST OF ONE LED LUMINAIRE

MODEL NO. 700FMPHB6x-LED927

RENDERED TO

Visual Comfort and Company

Contact Name: Tess Gallagher

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TEST: Electrical and Photometric as required to the IES LM-79 test standard.

STATEMENT OF LIMITATION: The report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the U.S. Government.

AUTHORIZATION: The testing performed was authorized by signed quote number: QGZ220704064.

STANDARDS USED: 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: 2008 Approved Method for the Electrical and Photometric Measurements of Solid-State Lighting Products

ANSI C78.377:2017 Specifications of the Chromaticity of Solid State Lighting Products

DESCRIPTION OF SAMPLE: The client submitted one sample of model 700FMPHB6x-LED927. The sample was received, in undamaged condition. The sample designation was S220706027-006.

DATES OF TESTS: 13 July 2022

ISSUED BY: Intertek Testing Services Shenzhen Ltd. Guangzhou Branch

TEST LOCATION: Room 02, & 101/E201/E301/E401/E501/E601/E701/E801 of Room 01 1-8/F., No. 7-2. Caipin Road, Science City, GETDD, Guangzhou, Guangdong, China

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TEST REPORT

SUMMARY

Model Number:	700FMPHB6x-LED927 (Remark: "X" denote other appearance colors for the characters that change)
Description:	LED Luminaries
Brand Name:	--

Test Condition: 120V, 60Hz For 700FMPHB6x-LED927

Criteria	Result
Total Lumen Output	1039.64 lm
Total Power	22.25 W
Luminaire Efficacy	46.73 lm/W
S/MH(C0/180)	6.38
S/MH(C90/270)	6.43
Correlated Color Temperature (CCT)	2612 K
Color Rendering Index (CRI)	93
R9	72
Chromaticity Coordinate (x)	0.4680
Chromaticity Coordinate (y)	0.4134
Chromaticity Coordinate (u')	0.2665
Chromaticity Coordinate (v')	0.5296

Remark:

Measurement uncertainty for applicable tests has been established.

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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	DS215S	SA063-16-06
Digital Power Meter	PLM3000	SA063-16-09
AC power source for Goniophotometer	PCR-1000WH	SA063-16-10
Temperature Meter	RC-HT601A	SA047-62

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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 WT210.

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

Standard lamp used for Goniophotometer method:

Model: D908S

Current: 7.255A

Standard lamp used for integrating sphere:

Model: S82134

Current: 1.830

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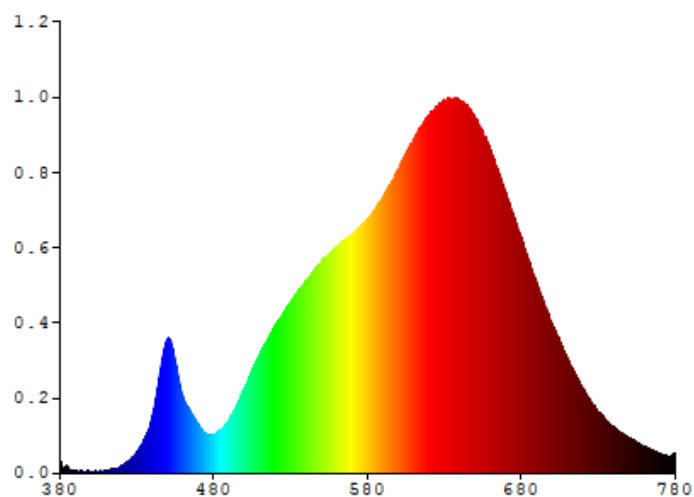
TEST REPORT

RESULTS OF TESTS

Test Condition: 120V, 60Hz For 700FMPHB6x-LED927

Spectral Distribution over Visible Wavelengths

nm	mW/nm	nm	mW/nm	nm	mW/nm	nm	mW/nm	nm	mW/nm
380	0.0058	480	0.0335	580	0.2172	680	0.2018	780	0.0176
385	0.0055	485	0.0379	585	0.2259	685	0.1820		
390	0.0024	490	0.0456	590	0.2366	690	0.1645		
395	0.0000	495	0.0584	595	0.2471	695	0.1455		
400	0.0005	500	0.0727	600	0.2609	700	0.1285		
405	0.0007	505	0.0880	605	0.2732	705	0.1141		
410	0.0022	510	0.1022	610	0.2863	710	0.0987		
415	0.0033	515	0.1144	615	0.2970	715	0.0851		
420	0.0058	520	0.1264	620	0.3069	720	0.0726		
425	0.0108	525	0.1360	625	0.3145	725	0.0621		
430	0.0178	530	0.1466	630	0.3189	730	0.0525		
435	0.0287	535	0.1561	635	0.3213	735	0.0457		
440	0.0475	540	0.1648	640	0.3197	740	0.0401		
445	0.0853	545	0.1726	645	0.3158	745	0.0346		
450	0.1143	550	0.1807	650	0.3048	750	0.0303		
455	0.0951	555	0.1877	655	0.2935	755	0.0266		
460	0.0657	560	0.1944	660	0.2771	760	0.0233		
465	0.0520	565	0.1996	665	0.2604	765	0.0198		
470	0.0418	570	0.2043	670	0.2408	770	0.0169		
475	0.0340	575	0.2102	675	0.2172	775	0.0143		



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TEST REPORT

RESULTS OF TESTS (cont'd)

Test Condition: 120V, 60Hz For 700FMPHB6x-LED927

Total operation burning time: 60 minutes

Stabilization time: 45 minutes

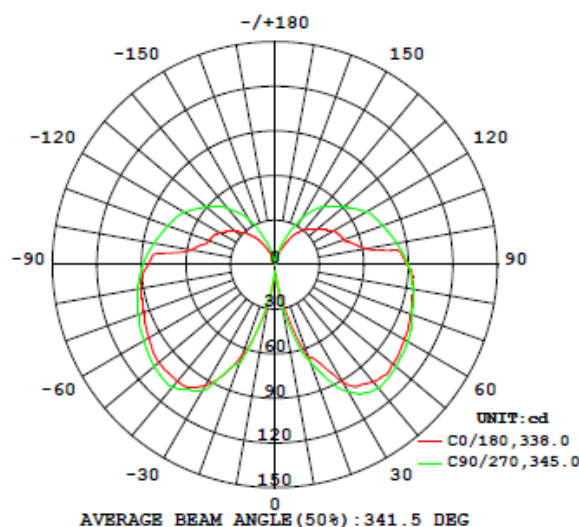
Photometric Measurements at 25°C – Integrating Sphere Method

Intertek Sample No.	Base Orientation	Correlated Color Temperatur e (K)	CRI	R9	CIE 31'	CIE 31'	CIE 76'	CIE 76'
					Chromaticit y	Chromaticit y	Chromaticit y	Chromaticit y
					Coordinate (x)	Coordinate (y)	Coordinate (u')	Coordinate (v')
700FMPHB6x-LED927								
S2207060 27-006	--	2612	93	72	0.4680	0.4134	0.2665	0.5296

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	Lumen
						Luminous Flux (Lumens)	Efficacy (Lumens Per Watt)
700FMPHB6x-LED927							
S2207060 27-006	--	120.0	189.0	22.25	0.980	1039.64	46.73

Intensity (Candlepower) Summary at 25°C – Candelas



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TEST REPORT

RESULTS OF TESTS (cont'd)

Test Condition: 120V, 60Hz For 700FMPHB6x-LED927

Intensity (Candlepower) Summary at 25°C - Candelas

V \ H(°)	0	22.5	45	67.5	90
0	3.8	3.8	3.8	3.8	3.8
5	7.0	8.2	9.6	9.5	10.2
10	19.6	22.9	24.6	24.5	27.4
15	42.0	45.5	37.5	45.5	50.8
20	66.7	70.3	48.7	74.4	69.0
25	74.1	95.6	56.2	100.7	85.8
30	91.1	117.6	64.9	122.1	98.7
35	99.2	125.3	68.5	132.0	105.4
40	103.0	129.9	70.3	134.1	108.4
45	104.9	131.7	69.9	135.8	107.7
50	103.9	132.6	70.4	134.7	106.5
55	102.5	131.2	70.0	133.8	104.9
60	100.8	131.0	68.9	133.4	103.4
65	99.3	131.4	67.6	132.5	101.2
70	97.4	131.3	66.6	132.0	98.5
75	95.7	129.7	65.7	130.6	96.3
80	94.4	127.4	64.5	128.0	94.4
85	93.2	125.0	63.3	125.5	92.3
90	89.0	121.8	61.8	122.2	89.8
95	85.7	117.2	59.2	117.2	86.8
100	62.5	111.9	56.5	111.9	83.4
105	54.9	105.9	54.0	104.6	80.2
110	49.5	96.9	51.8	95.9	77.3
115	47.9	89.9	49.8	88.7	74.7
120	45.7	79.5	47.3	79.8	71.3
125	40.9	68.9	44.8	70.6	65.8
130	36.9	61.3	42.9	65.6	60.5
135	33.7	54.9	40.9	60.8	55.7
140	30.1	50.5	38.5	55.3	51.2
145	26.3	45.7	35.2	47.9	44.5
150	21.0	36.7	29.4	37.8	35.6
155	14.3	24.9	21.5	26.2	25.8
160	9.9	16.8	14.6	16.1	16.6
165	5.5	9.8	8.5	8.5	9.4
170	2.2	3.6	3.7	3.7	3.8
175	0.9	0.9	1.2	1.4	1.3
180	0.2	0.4	0.4	0.5	0.6

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TEST REPORT

RESULTS OF TESTS (cont'd)

Test Condition: 120V, 60Hz For 700FMPHB6x-LED927

Zonal Lumen Summary and Percentages at 25°C

Zone	Lumens (lm)	% Luminaire (%)
700FMPHB6x-LED927		
0-30	53.53	5.15
0-40	121.42	11.68
0-60	308.56	29.68
0-90	642.57	61.81
60-90	334.01	32.13
0-180	1039.64	100

Beam Angle

Total Beam Angle (°)

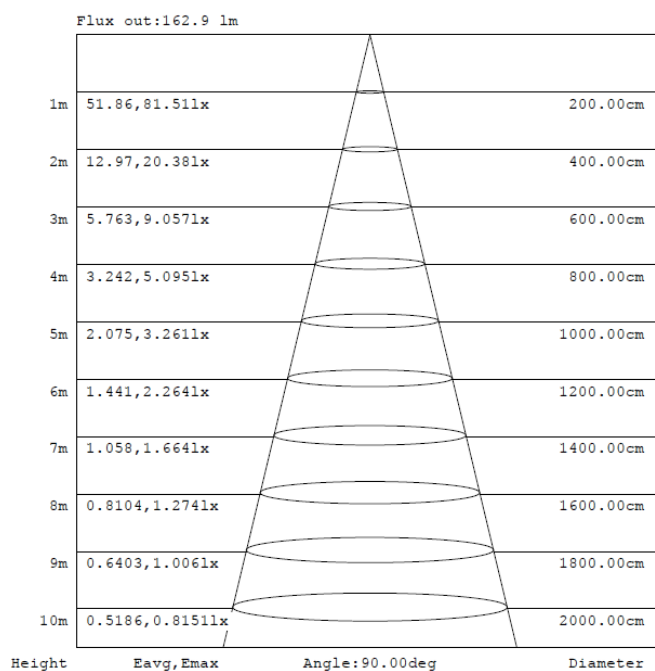
341.5

Illumination Plots

Model No.: 700FMPHB6x-LED927

Mount Height: 2.5 m

Illuminance - Cone of Light



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TEST REPORT

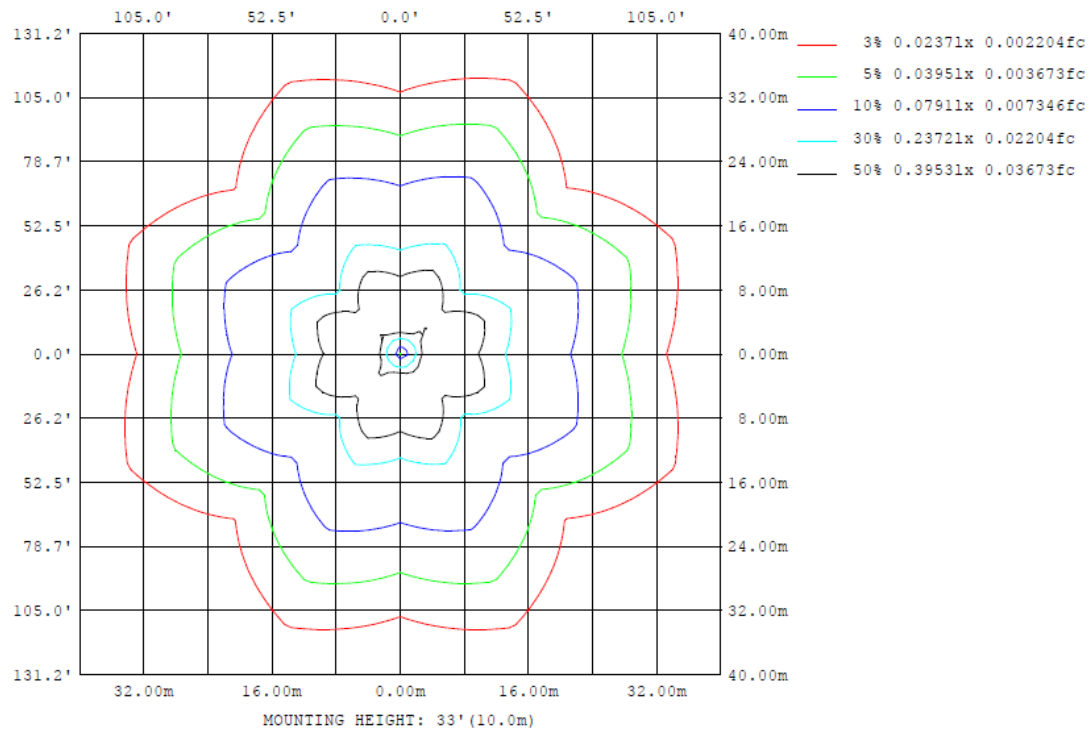
RESULTS OF TESTS (cont'd)

Test Condition: 120V, 60Hz For 700FMPHB6x-LED927

Model No.: 700FMPHB6x-LED927

Mount Height: 2.5 m

Isoillumination Plot



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TEST REPORT

RESULTS OF TESTS (cont'd)

Test Condition: 120V, 60Hz For 700FMPHB6x-LED927

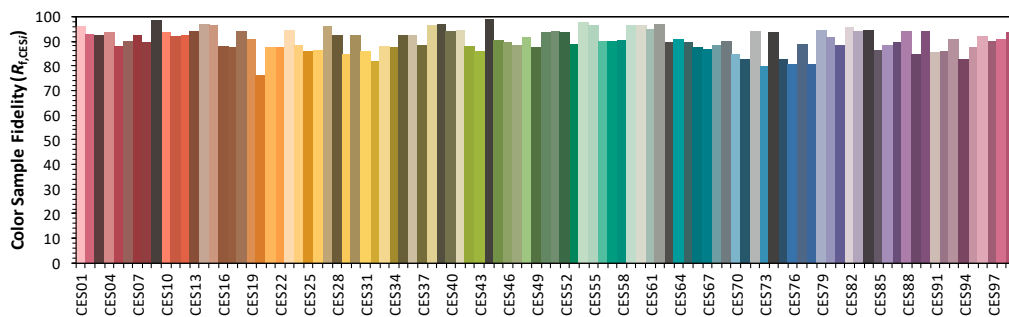
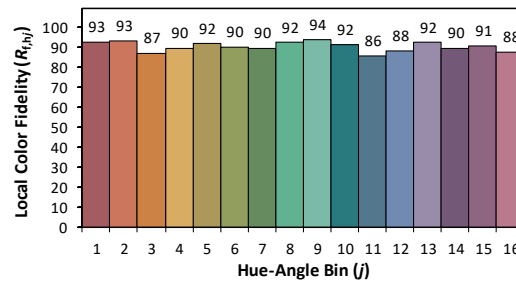
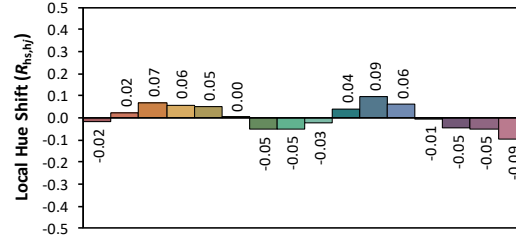
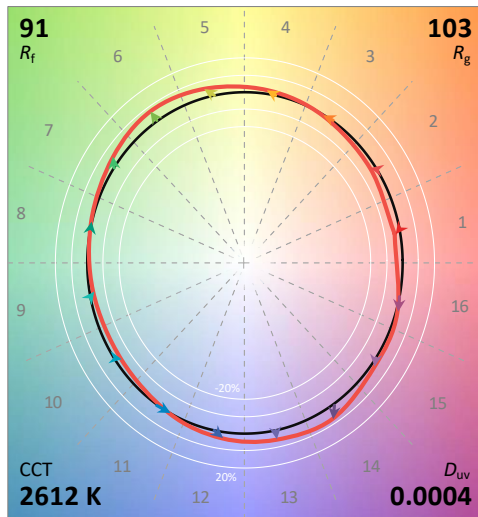
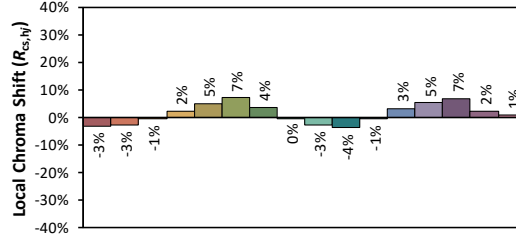
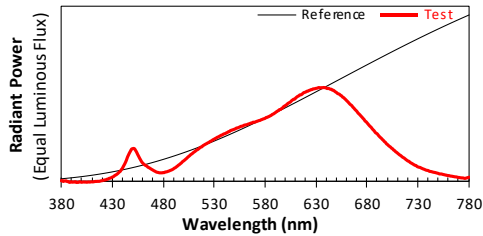
ANSI/IES TM-30-18 Color Rendition Report

Source: User SPD

Manufacturer: Visual Comfort and Company

Date: 2022/7/13

Model: 700FMPHB6x-LED927



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

x 0.4680
 y 0.4134
 u' 0.2665
 v' 0.5296

CIE 13.3-1995
(CRI)
 R_a 93
 R_g 72

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

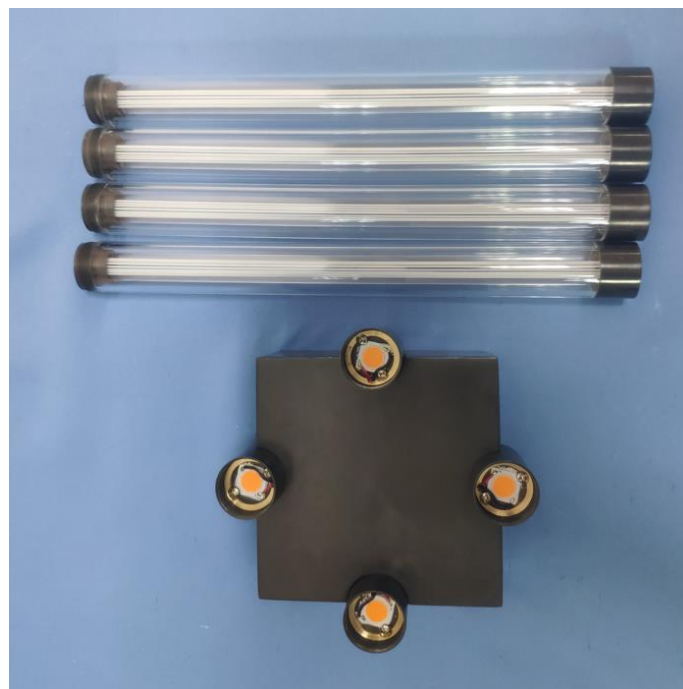
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TEST REPORT

PRODUCT PICTURE (not to scale)



External view of 700FMPHB6x-LED927



External view of 700FMPHB6x-LED927

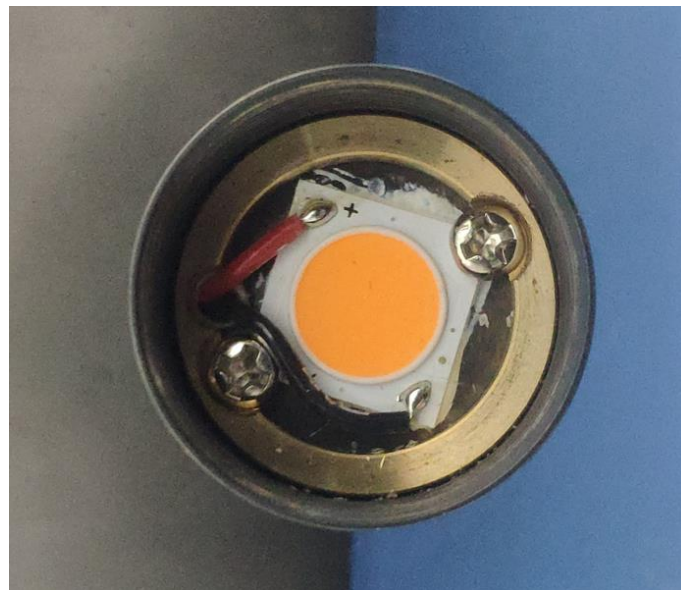
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TEST REPORT

PRODUCT PICTURE (not to scale)



View of LED Driver DA25W600C2742BF1-3001



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 *****