

Visual Comfort and Company

TEST REPORT

SCOPE OF WORK

LM-79 testing report

REPORT NUMBER

220401100GZU-007

ISSUE DATE

07 April 2022

REVISION DATE

None

NUMBER OF PAGES

13

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Report No.: 220401100GZU-007

TEST REPORT

TEST OF ONE LED LUMINAIRE

MODEL NO. 700WSPHB33xx-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: QGZ220329042.

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 700WSPHB33xx-LED927. The sample was received, in undamaged condition. The sample designation was S220401100-007.

DATES OF TESTS: 07 April 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:	700WSPHB33xx-LED927 (Remark: "XX" denote other appearance colors for the characters that change)
Description:	LED Luminaries
Brand Name:	--

Test Condition: 120V, 60Hz For 700WSPHB33xx-LED927

Criteria	Result
Total Lumen Output	605.3 lm
Total Power	10.3 W
Luminaire Efficacy	58.60 lm/W
S/MH(C0/180)	1.58
S/MH(C90/270)	1.59
Correlated Color Temperature (CCT)	2742 K
Color Rendering Index (CRI)	93
R9	76
Chromaticity Coordinate (x)	0.4557
Chromaticity Coordinate (y)	0.4084
Chromaticity Coordinate (u')	0.2608
Chromaticity Coordinate (v')	0.5259

Remark:

Measurement uncertainty for applicable tests has been established.

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TEST REPORT

EQUIPMENT LIST

Equipment Used	Model Number	Control Number
Temperature Meter	RS210	SA047-126
Sensing - DC Power Supply	IT6122	SA063-12-09
Sensing- AC power source for Integrating Sphere System	APW-105N	SA063-12-05
Everfine - AC power source for Goniophotometer System	DPS1060	SA063-16-03
Two meter integrating sphere unit	Sensing – 2M	SA063-12-01
YOKOGAWA – Digital Power Meter	WT-210	SA011-122
Everfine – Goniophotometer	Go-R5000	SA063-16
KONICA MINOLTA - Illuminance meter	CX-2B_WL	SA063-16-01
Standard lamp	S82134	SA063-12-13
Standard lamp	S1320039	SA063-12-24
Standard lamp	D908S	SA063-16-05
Standard lamp	D215S	SA063-16-06

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 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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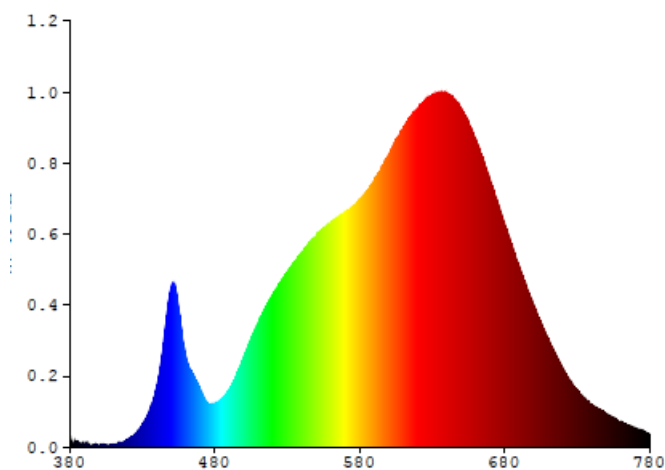
TEST REPORT

RESULTS OF TESTS

Test Condition: 120V, 60Hz For 700WSPHB33xx-LED927

Spectral Distribution over Visible Wavelengths

nm	mW/nm	nm	mW/nm	nm	mW/nm	nm	mW/nm	nm	mW/nm
380	0.0157	480	0.1245	580	0.7107	680	0.6387	780	0.0363
385	0.0150	485	0.1393	585	0.7354	685	0.5785		
390	0.0044	490	0.1665	590	0.7670	690	0.5182		
395	0.0031	495	0.2082	595	0.8080	695	0.4626		
400	0.0049	500	0.2615	600	0.8423	700	0.4081		
405	0.0032	505	0.3124	605	0.8844	705	0.3548		
410	0.0071	510	0.3591	610	0.9188	710	0.3110		
415	0.0109	515	0.4020	615	0.9499	715	0.2678		
420	0.0224	520	0.4384	620	0.9750	720	0.2267		
425	0.0378	525	0.4746	625	0.9972	725	0.1902		
430	0.0642	530	0.5044	630	1.0115	730	0.1626		
435	0.1059	535	0.5323	635	1.0188	735	0.1400		
440	0.1745	540	0.5605	640	1.0157	740	0.1228		
445	0.3124	545	0.5874	645	1.0026	745	0.1078		
450	0.4605	550	0.6075	650	0.9736	750	0.0950		
455	0.3948	555	0.6295	655	0.9356	755	0.0841		
460	0.2572	560	0.6480	660	0.8850	760	0.0738		
465	0.2067	565	0.6610	665	0.8290	765	0.0628		
470	0.1629	570	0.6757	670	0.7650	770	0.0540		
475	0.1271	575	0.6929	675	0.6926	775	0.0460		



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TEST REPORT

RESULTS OF TESTS (cont'd)

Test Condition: 120V, 60Hz For 700WSPHB33xx-LED927

Total operation burning time: 60 minutes

Stabilization time: 45 minutes

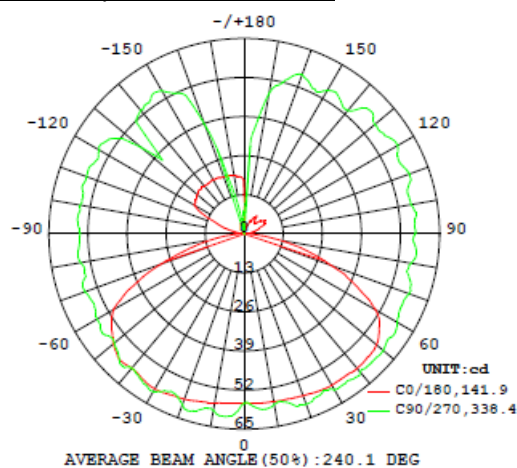
Photometric Measurements at 25°C – Integrating Sphere Method

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')
700WSPHB33xx-LED927								
S2204011 00-007	--	2742	93	76	0.4557	0.4084	0.2608	0.5259

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)
700WSPHB33xx-LED927							
S2204011 00-007	--	120.0	87.1	10.3	0.988	605.3	58.60

Intensity (Candlepower) Summary at 25°C - Candelas



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TEST REPORT

RESULTS OF TESTS (cont'd)

Test Condition: 120V, 60Hz For 700WSPHB33xx-LED927

Intensity (Candlepower) Summary at 25°C - Candelas

V \ H(°)	0	22.5	45	67.5	90
0	56.4	56.4	56.4	56.4	56.3
5	56.5	57.0	58.1	58.3	58.4
10	56.6	58.6	59.1	58.0	57.5
15	56.9	59.4	57.4	58.0	58.2
20	57.3	59.1	59.8	61.2	60.2
25	57.8	58.1	61.7	60.6	59.3
30	58.2	58.7	59.9	60.6	59.9
35	58.0	62.0	60.8	62.2	59.8
40	58.4	60.9	62.2	62.7	59.9
45	58.0	59.8	62.0	63.2	60.3
50	57.3	60.2	61.9	62.8	60.4
55	54.8	58.3	61.6	61.2	59.8
60	50.3	57.5	63.1	60.3	58.8
65	41.3	55.4	61.6	58.0	57.6
70	30.8	53.1	57.2	58.4	58.3
75	21.5	48.7	58.8	58.6	56.8
80	11.7	45.8	57.4	56.6	56.3
85	4.6	41.4	56.9	57.9	57.4
90	0.9	39.6	56.2	57.4	56.8
95	1.6	40.7	58.0	58.0	57.1
100	2.4	43.1	57.4	57.5	56.3
105	3.6	44.4	59.7	57.4	56.2
110	5.3	50.2	58.7	59.3	58.5
115	7.3	48.9	58.7	58.0	56.9
120	7.9	48.8	59.0	59.4	58.8
125	7.6	46.2	58.4	58.2	57.1
130	7.0	47.7	52.9	58.3	56.6
135	5.0	47.3	47.6	56.7	58.5
140	5.1	47.4	49.7	48.8	53.7
145	7.3	48.1	47.3	51.9	55.2
150	6.4	44.7	49.3	50.4	55.1
155	5.1	42.6	51.5	51.4	53.6
160	3.0	35.7	48.6	53.8	56.4
165	1.9	29.4	45.7	49.8	53.0
170	0.4	14.8	35.6	43.8	47.5
175	2.8	2.2	7.5	19.2	34.0
180	9.1	8.1	5.1	5.7	6.8

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TEST REPORT

RESULTS OF TESTS (cont'd)

Test Condition: 120V, 60Hz For 700WSPHB33xx-LED927

Zonal Lumen Summary and Percentages at 25°C

Zone	Lumens (lm)	% Luminaire (%)
700WSPHB33xx-LED927		
0-30	50.3	8.3
0-40	88.1	14.6
0-60	186.5	30.8
0-90	335.7	55.5
60-90	149.2	24.7
0-180	605.3	100

Beam Angle

Total Beam Angle (°)

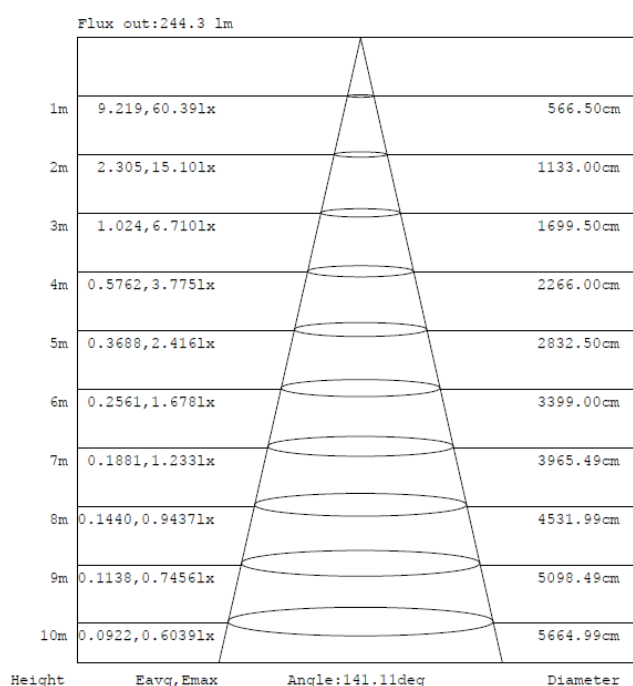
240.1

Illumination Plots

Model No.: 700WSPHB33xx-LED927

Mount Height: 2.5 m

Illuminance - Cone of Light



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TEST REPORT

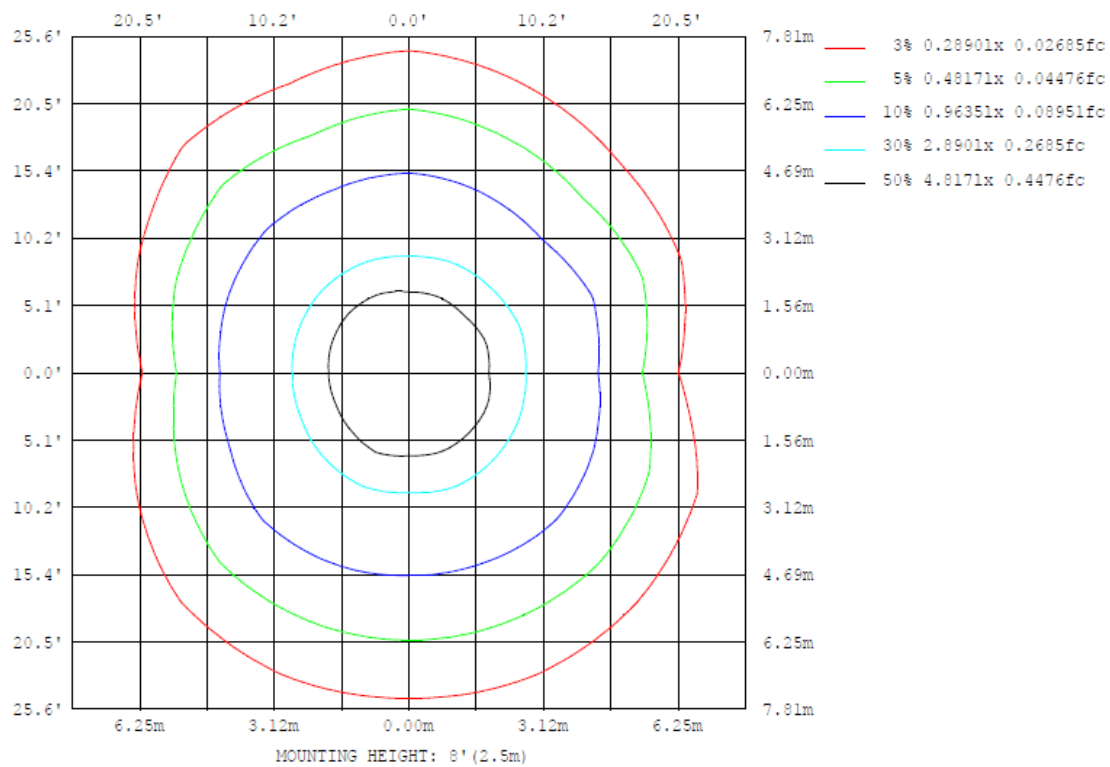
RESULTS OF TESTS (cont'd)

Test Condition: 120V, 60Hz For 700WSPHB33xx-LED927

Model No.: 700WSPHB33xx-LED927

Mount Height: 2.5 m

Isoillumination Plot



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TEST REPORT

RESULTS OF TESTS (cont'd)

Test Condition: 120V, 60Hz For 700WSPHB33xx-LED927

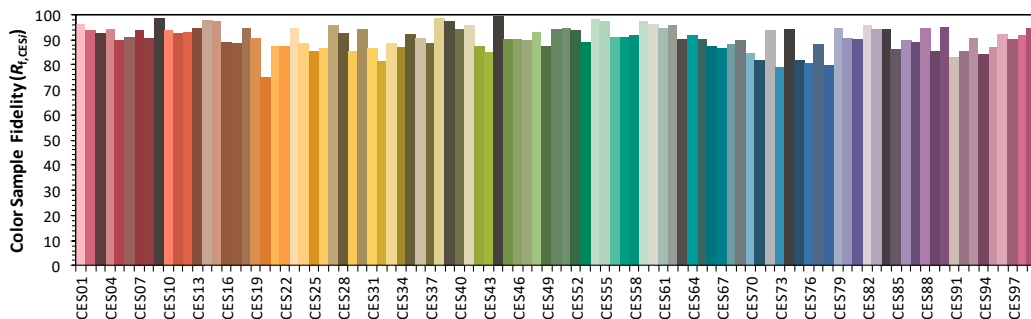
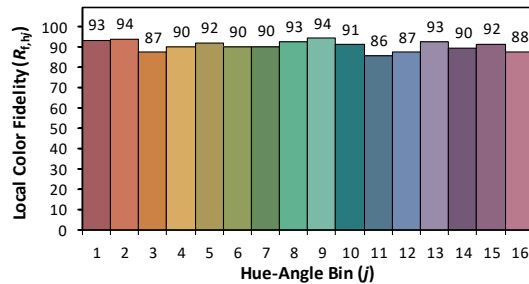
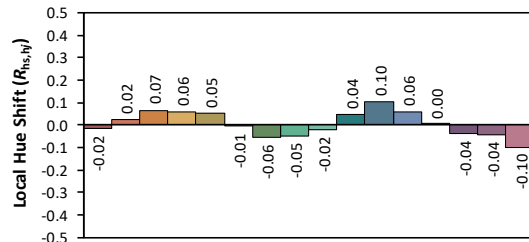
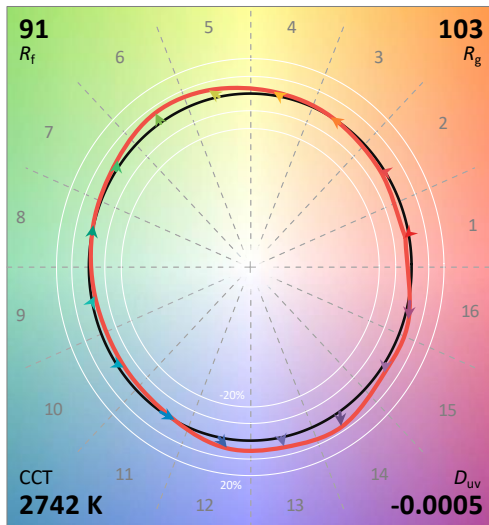
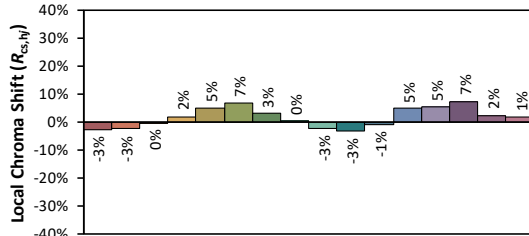
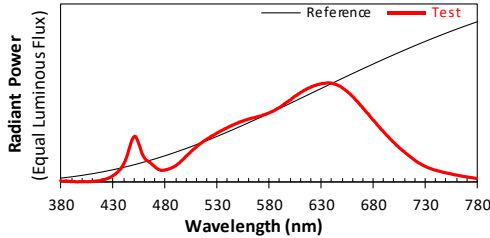
ANSI/IES TM-30-18 Color Rendition Report

Source: User SPD

Manufacturer: Visual Comfort and Company

Date: 2022/4/7

Model: 700WSPHB33xx-LED927



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

x 0.4557
 y 0.4084
 u' 0.2608
 v' 0.5259

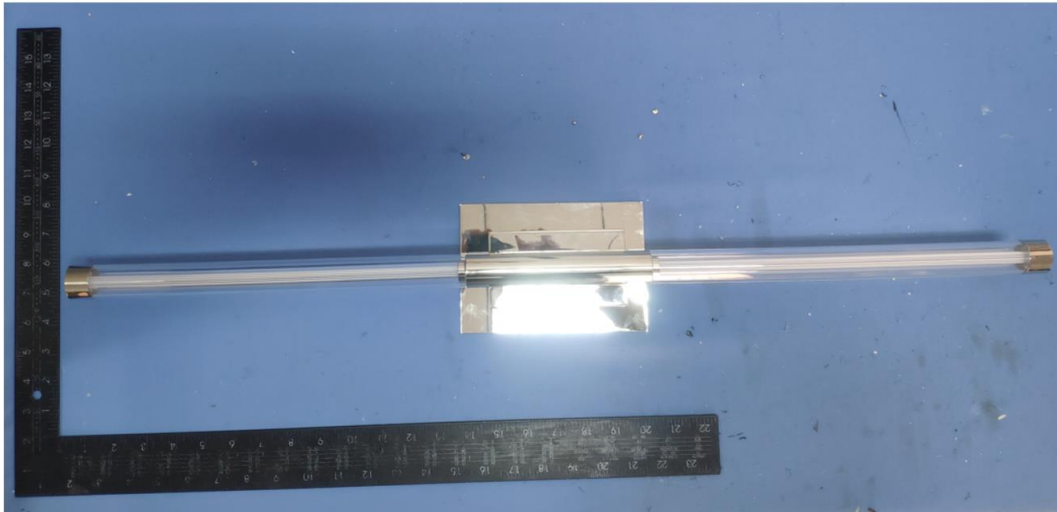
CIE 13.3-1995
(CRI)
 R_a 93
 R_g 76

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 700WSPHB33xx-LED927



External view of 700WSPHB33xx-LED927

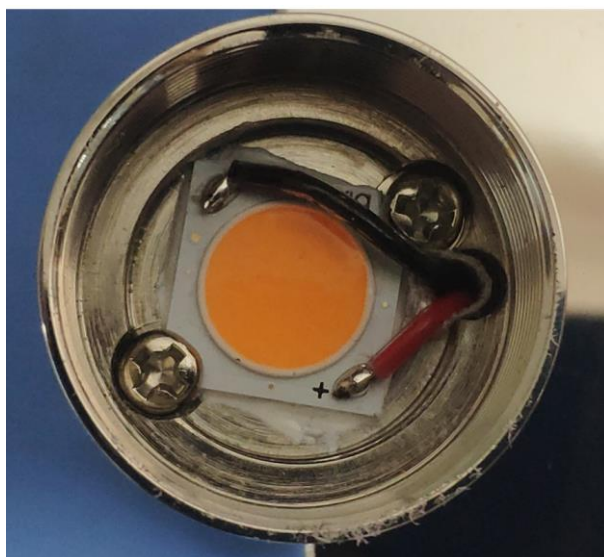
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TEST REPORT

PRODUCT PICTURE (not to scale)



View of LED Driver PVD11-C030V33-UNV3-HE-P



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 *****