

Visual Comfort and Company

TEST REPORT

SCOPE OF WORK

LM-79 testing report

REPORT NUMBER

220401100GZU-006

ISSUE DATE

06 April 2022

REVISION DATE

None

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13

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Report No.: 220401100GZU-006

TEST REPORT

TEST OF ONE LED LUMINAIRE

MODEL NO. 700WSPHB21xx-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 700WSPHB21xx-LED927. The sample was received, in undamaged condition. The sample designation was S220401100-006.

DATES OF TESTS: 06 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:	700WSPHB21xx-LED927 (Remark: "XX" denote other appearance colors for the characters that change)
Description:	LED Luminaries
Brand Name:	--

Test Condition: 120V, 60Hz For 700WSPHB21xx-LED927

Criteria	Result
Total Lumen Output	317.8 lm
Total Power	7.7 W
Luminaire Efficacy	41.27 lm/W
S/MH(C0/180)	1.28
S/MH(C90/270)	1.49
Correlated Color Temperature (CCT)	2642 K
Color Rendering Index (CRI)	92
R9	73
Chromaticity Coordinate (x)	0.4653
Chromaticity Coordinate (y)	0.4127
Chromaticity Coordinate (u')	0.2650
Chromaticity Coordinate (v')	0.5289

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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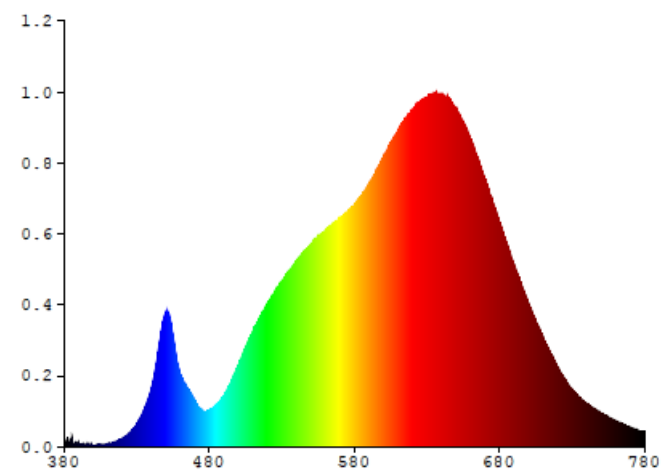
TEST REPORT

RESULTS OF TESTS

Test Condition: 120V, 60Hz For 700WSPHB21xx-LED927

Spectral Distribution over Visible Wavelengths

nm	mW/nm	nm	mW/nm	nm	mW/nm	nm	mW/nm	nm	mW/nm
380	0.0228	480	0.1021	580	0.6738	680	0.6228	780	0.0415
385	0.0212	485	0.1156	585	0.6988	685	0.5635		
390	0.0102	490	0.1409	590	0.7305	690	0.5074		
395	0.0029	495	0.1801	595	0.7696	695	0.4497		
400	0.0033	500	0.2270	600	0.8095	700	0.3966		
405	0.0040	505	0.2765	605	0.8451	705	0.3475		
410	0.0074	510	0.3204	610	0.8784	710	0.3035		
415	0.0130	515	0.3609	615	0.9134	715	0.2598		
420	0.0217	520	0.3979	620	0.9363	720	0.2211		
425	0.0375	525	0.4292	625	0.9570	725	0.1868		
430	0.0627	530	0.4602	630	0.9711	730	0.1593		
435	0.1018	535	0.4880	635	0.9835	735	0.1368		
440	0.1597	540	0.5148	640	0.9794	740	0.1190		
445	0.2707	545	0.5426	645	0.9681	745	0.1051		
450	0.3746	550	0.5627	650	0.9384	750	0.0933		
455	0.3047	555	0.5864	655	0.9028	755	0.0817		
460	0.1997	560	0.6029	660	0.8541	760	0.0698		
465	0.1621	565	0.6169	665	0.8027	765	0.0627		
470	0.1270	570	0.6344	670	0.7436	770	0.0531		
475	0.1009	575	0.6505	675	0.6718	775	0.0446		



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TEST REPORT

RESULTS OF TESTS (cont'd)

Test Condition: 120V, 60Hz For 700WSPHB21xx-LED927

Total operation burning time: 60 minutes

Stabilization time: 45 minutes

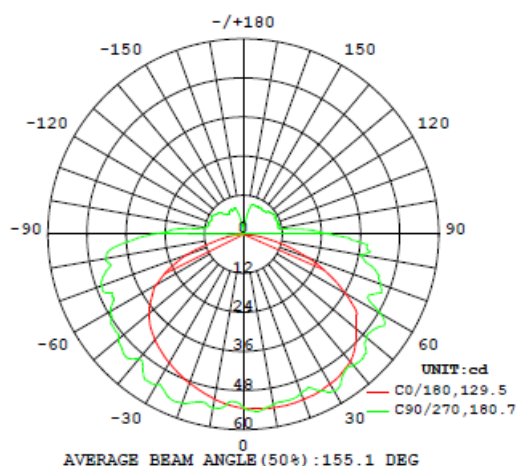
Photometric Measurements at 25°C – Integrating Sphere Method

Intertek Sample No.	Base Orientation	Correlated Color Temperatur e (K)	CRI	R9	CIE 31'	CIE 31'	CIE 76'	CIE 76'
					Chromaticit	Chromaticit	Chromaticit	Chromaticit
					y	y	y	y
					Coordinate	Coordinate	Coordinate	Coordinate
					(x)	(y)	(u')	(v')
700WSPHB21xx-LED927								
S2204011 00-006	--	2642	92	73	0.4653	0.4127	0.2650	0.5289

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)
700WSPHB21xx-LED927							
S2204011 00-006	--	120.0	65.3	7.7	0.983	317.8	41.27

Intensity (Candlepower) Summary at 25°C - Candelas



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TEST REPORT

RESULTS OF TESTS (cont'd)

Test Condition: 120V, 60Hz For 700WSPHB21xx-LED927

Intensity (Candlepower) Summary at 25°C - Candelas

V \ H(°)	0	22.5	45	67.5	90
0	53.4	53.3	53.3	53.3	53.2
5	53.8	54.4	54.8	54.8	54.6
10	54.0	55.1	54.5	53.8	53.1
15	54.1	55.1	54.1	53.5	52.9
20	53.9	54.7	54.0	53.1	52.0
25	53.8	54.5	53.8	52.5	52.8
30	53.1	54.0	53.8	55.8	55.5
35	52.3	53.3	54.4	55.0	53.0
40	51.1	52.7	54.0	53.1	52.7
45	48.6	51.5	52.4	53.3	52.3
50	45.3	50.4	51.5	51.5	49.5
55	42.6	48.7	50.2	49.1	50.0
60	35.9	44.9	47.3	50.9	48.5
65	28.7	41.5	46.5	42.6	43.8
70	21.1	37.4	43.5	45.3	45.0
75	13.2	33.2	41.6	42.3	41.9
80	6.6	25.0	37.9	37.4	36.4
85	2.0	18.6	31.5	37.4	38.1
90	0.4	14.2	24.7	28.1	26.5
95	1.3	9.3	15.9	17.9	18.3
100	1.3	10.1	12.2	11.8	11.0
105	1.2	11.2	12.6	11.9	11.2
110	0.9	12.8	12.4	11.7	11.2
115	0.6	13.2	12.5	11.5	10.9
120	0.4	13.3	12.2	12.0	11.4
125	0.3	12.8	12.7	11.5	11.0
130	0.3	12.8	12.0	11.9	10.6
135	0.3	12.3	12.3	11.1	9.8
140	0.3	12.2	11.8	10.7	9.5
145	0.3	11.6	11.5	10.6	9.6
150	0.2	9.5	11.0	10.2	9.6
155	0.2	6.4	10.8	10.0	9.4
160	0.2	3.3	9.6	10.1	9.7
165	0.2	1.5	6.3	8.8	9.1
170	0.1	0.3	2.2	4.6	5.2
175	0.1	0.1	0.1	0.3	0.8
180	0.1	0.1	0.1	0.1	0.1

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TEST REPORT

RESULTS OF TESTS (cont'd)

Test Condition: 120V, 60Hz For 700WSPHB21xx-LED927

Zonal Lumen Summary and Percentages at 25°C

Zone	Lumens (lm)	% Luminaire (%)
700WSPHB21xx-LED927		
0-30	44.2	13.9
0-40	76.1	23.9
0-60	154.0	48.5
0-90	259.9	81.8
60-90	105.9	33.3
0-180	317.8	100

Beam Angle

Total Beam Angle (°)

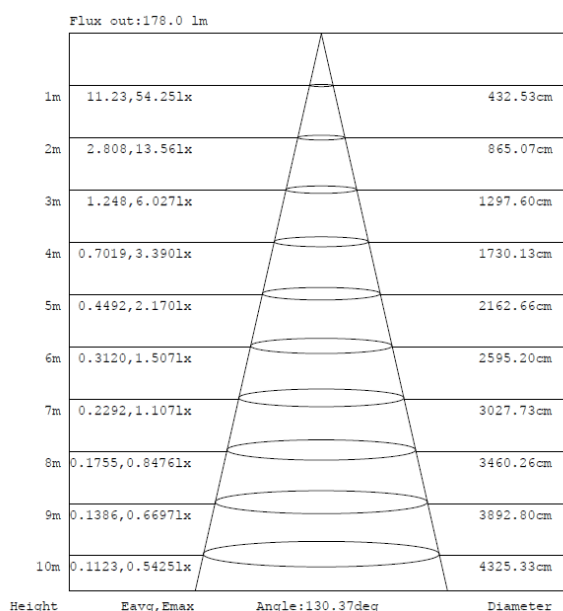
155.1

Illumination Plots

Model No.: 700WSPHB21xx-LED927

Mount Height: 2.5 m

Illuminance - Cone of Light



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TEST REPORT

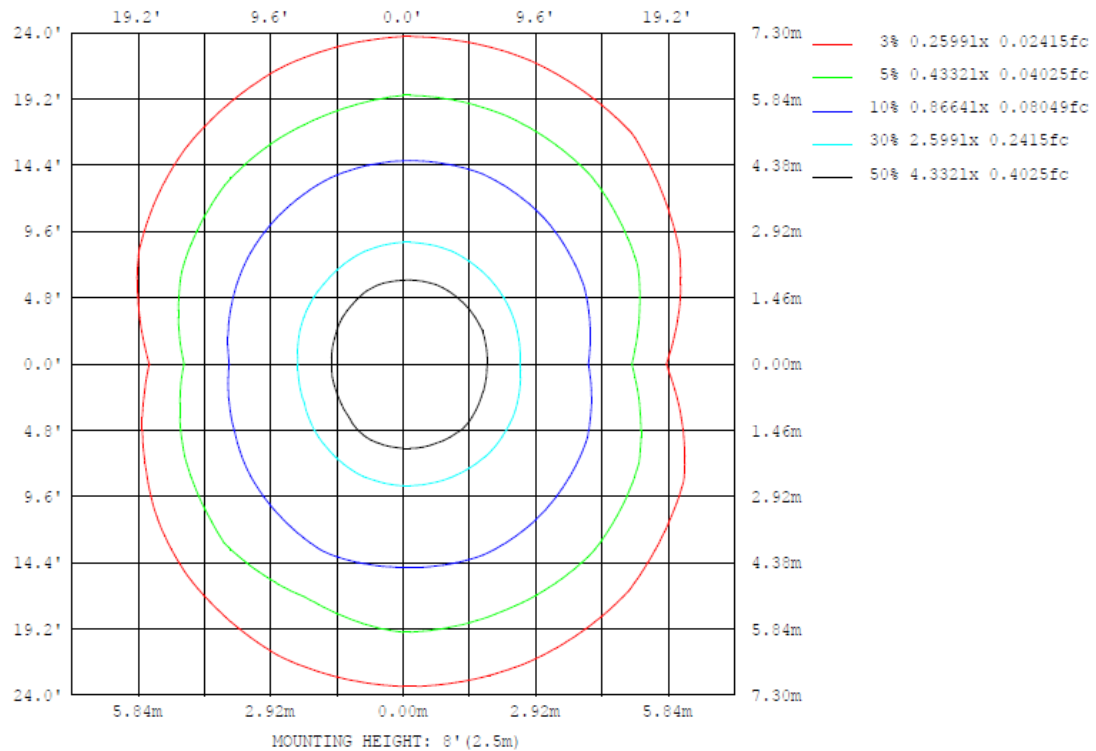
RESULTS OF TESTS (cont'd)

Test Condition: 120V, 60Hz For 700WSPHB21xx-LED927

Model No.: 700WSPHB21xx-LED927

Mount Height: 2.5 m

Isoillumination Plot



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TEST REPORT

RESULTS OF TESTS (cont'd)

Test Condition: 120V, 60Hz For 700WSPHB21xx-LED927

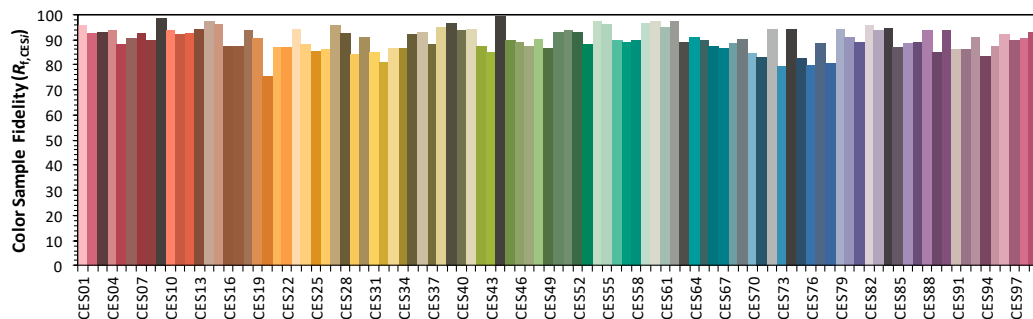
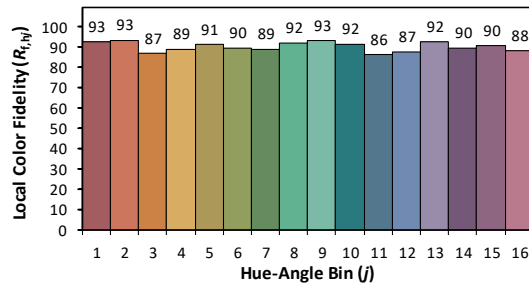
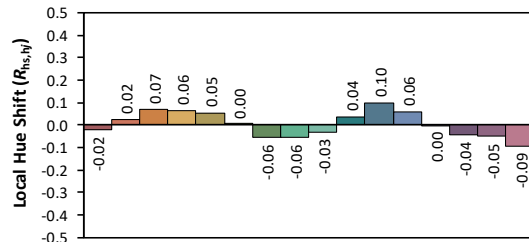
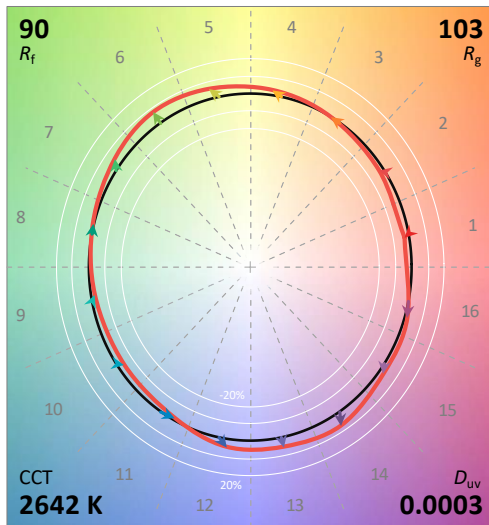
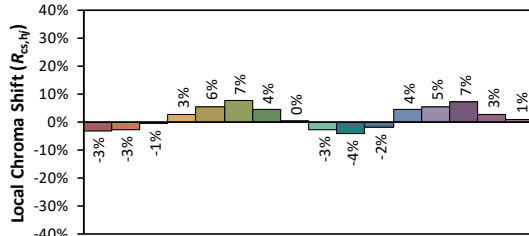
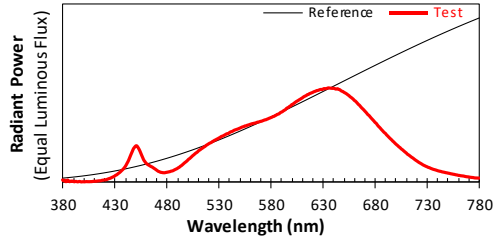
ANSI/IES TM-30-18 Color Rendition Report

Source: User SPD

Manufacturer: Visual Comfort and Company

Date: 2022/4/6

Model: 700WSPHB21xx-LED927



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

x 0.4653
 y 0.4127
 u' 0.2650
 v' 0.5289

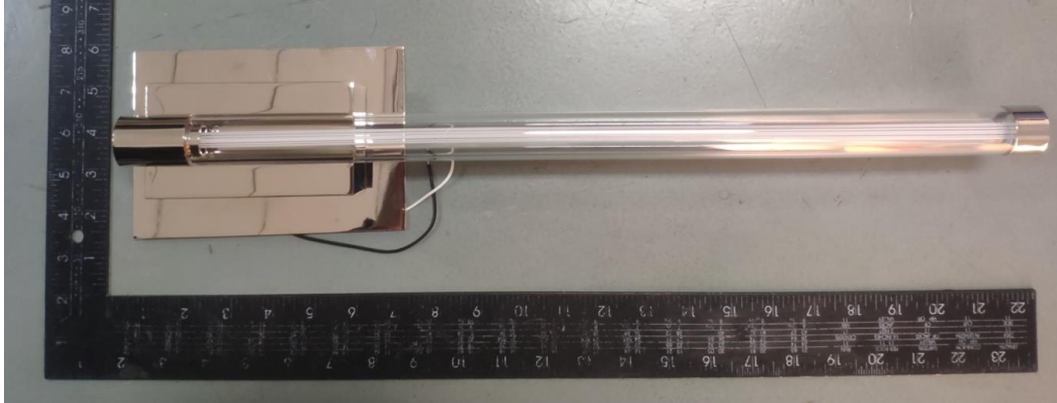
CIE 13.3-1995
(CRI)
 R_a 92
 R_g 73

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

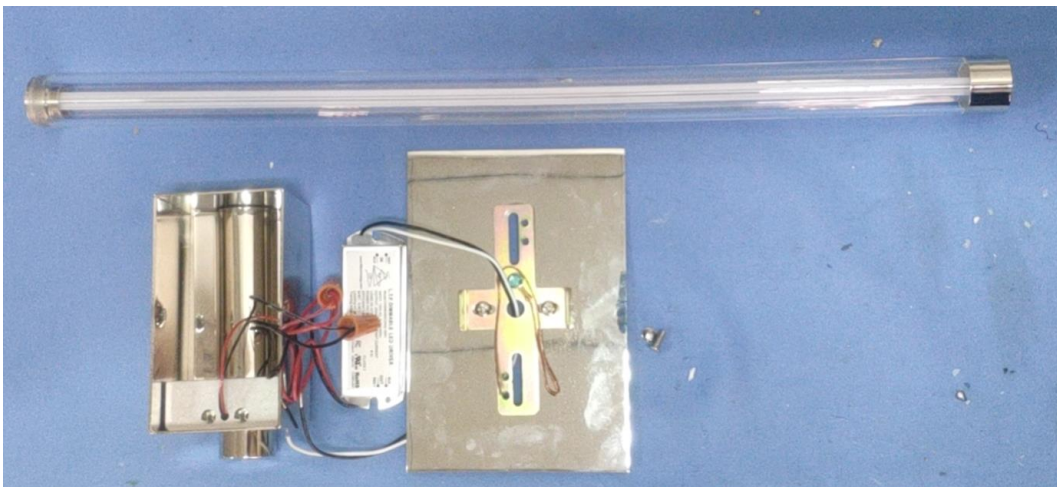
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TEST REPORT

PRODUCT PICTURE (not to scale)



External view of 700WSPHB21xx-LED927

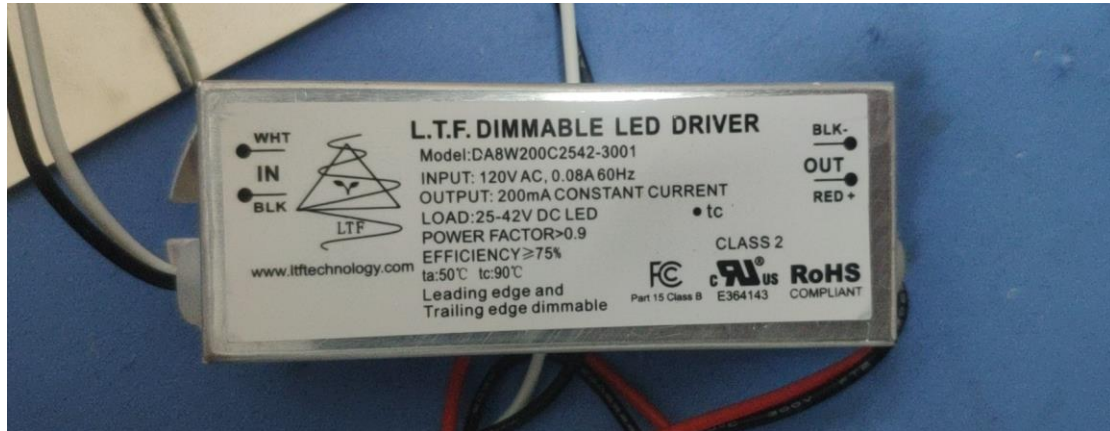


External view of 700WSPHB21xx-LED927

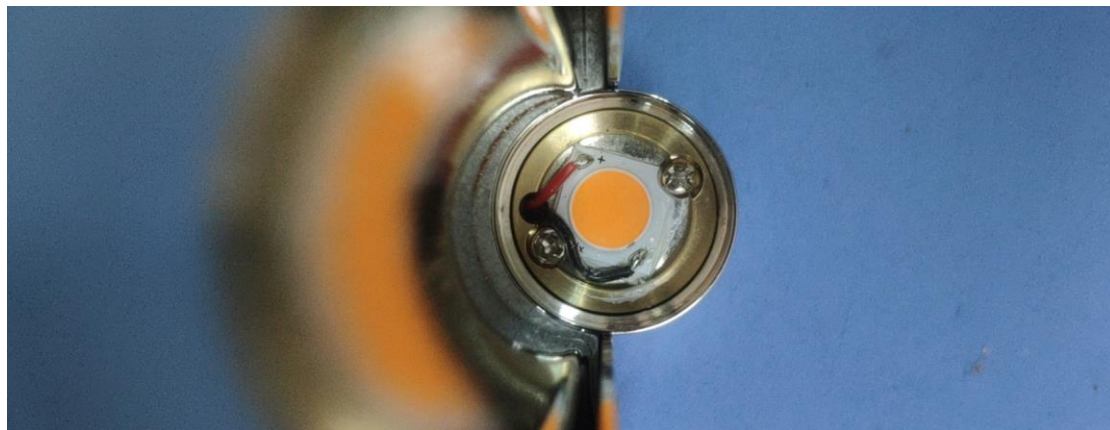
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TEST REPORT

PRODUCT PICTURE (not to scale)



View of LED Driver DA8W200C2542-3001



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 *****