

# Visual Comfort and Company

## TEST REPORT

**SCOPE OF WORK**

LM-79 testing report

**REPORT NUMBER**

220706027GZU-009

**ISSUE DATE**

02 August 2022

**REVISION DATE**

None

**NUMBER OF PAGES**

13

**DOCUMENT CONTROL NUMBER**

Report format for LM-79:2008\_F

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## TEST REPORT

### TEST OF ONE LED LUMINAIRE

MODEL NO. 700OWLYD9307xUNV

#### 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 700OWLYD9307xUNV. The sample was received, in undamaged condition. The sample designation was S220706027-011.

**DATES OF TESTS:** 02 August 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:	700OWLYD9307xUNV (Remark: "X" denote other appearance colors for the characters that change)
Description:	LED Luminaries
Brand Name:	--

### Test Condition: 120V, 60Hz For 700OWLYD9307xUNV

Criteria	Result
Total Lumen Output	598.26 lm
Total Power	19.43 W
Luminaire Efficacy	30.79 lm/W
S/MH(C0/180)	0.68
S/MH(C90/270)	0.78
Correlated Color Temperature (CCT)	2950 K
Color Rendering Index (CRI)	92
R9	63
Chromaticity Coordinate (x)	0.4401
Chromaticity Coordinate (y)	0.4044
Chromaticity Coordinate (u')	0.2525
Chromaticity Coordinate (v')	0.5220

### 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

## 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 $\pi$  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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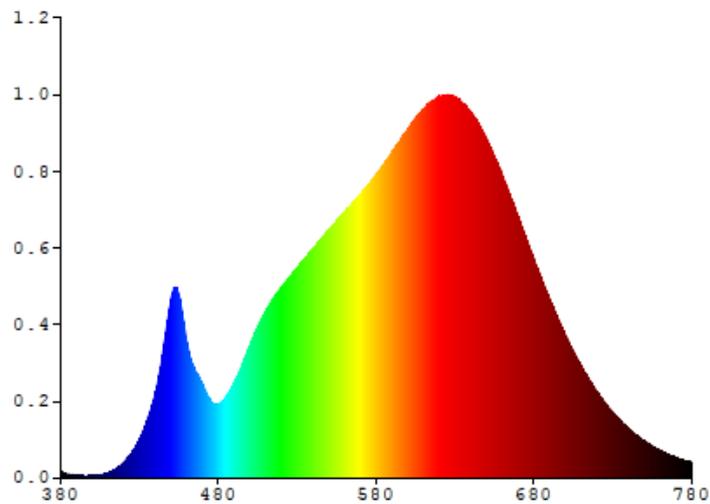
## TEST REPORT

### RESULTS OF TESTS

**Test Condition: 120V, 60Hz For 700OWLYD9307xUNV**

Spectral Distribution over Visible Wavelengths

nm	mW/nm								
380	0.0687	480	0.7439	580	3.0846	680	2.2292	780	0.1622
385	0.0332	485	0.8300	585	3.1930	685	2.0179		
390	0.0278	490	0.9640	590	3.3073	690	1.8183		
395	0.0210	495	1.1438	595	3.4249	695	1.6300		
400	0.0210	500	1.3458	600	3.5487	700	1.4526		
405	0.0282	505	1.5341	605	3.6616	705	1.2876		
410	0.0484	510	1.6934	610	3.7561	710	1.1397		
415	0.0874	515	1.8253	615	3.8343	715	1.0007		
420	0.1531	520	1.9355	620	3.8900	720	0.8787		
425	0.2498	525	2.0374	625	3.8971	725	0.7646		
430	0.3927	530	2.1413	630	3.8718	730	0.6657		
435	0.5849	535	2.2349	635	3.8134	735	0.5775		
440	0.8572	540	2.3350	640	3.7270	740	0.5025		
445	1.2832	545	2.4265	645	3.6051	745	0.4336		
450	1.8046	550	2.5260	650	3.4566	750	0.3776		
455	1.8537	555	2.6199	655	3.2727	755	0.3246		
460	1.3820	560	2.7078	660	3.0822	760	0.2790		
465	1.0991	565	2.7956	665	2.8805	765	0.2422		
470	0.9510	570	2.8875	670	2.6622	770	0.2061		
475	0.7842	575	2.9829	675	2.3968	775	0.1794		



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## TEST REPORT

### RESULTS OF TESTS (cont'd)

**Test Condition: 120V, 60Hz For 700OWLYD9307xUNV**

Total operation burning time: 60 minutes

Stabilization time: 45 minutes

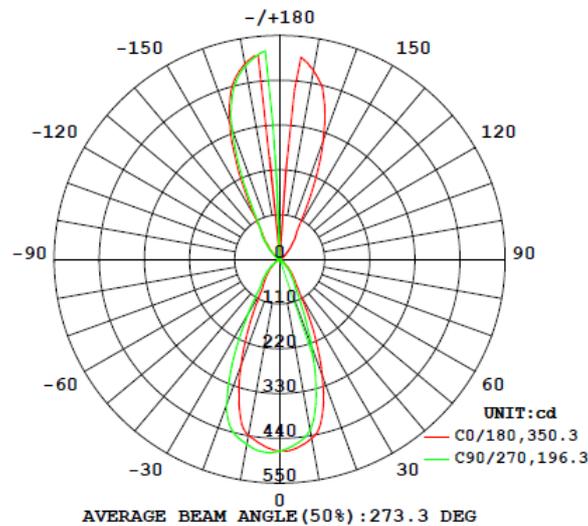
#### Photometric Measurements at 25°C – Integrating Sphere Method

Intertek Sample No.	Base Orientation	Correlated Color Temperature (K)	CRI	R9	CIE 31'	CIE 31'	CIE 76'	CIE 76'
					Chromaticity Coordinate (x)	Chromaticity Coordinate (y)	Chromaticity Coordinate (u')	Chromaticity Coordinate (v')
700OWLYD9307xUNV								
S2207060 27-011	--	2950	92	63	0.4401	0.4044	0.2525	0.5220

#### 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 Flux (Lumens)	Lumen Efficacy (Lumens Per Watt)
700OWLYD9307xUNV							
S2207060 27-011	--	120.0	162.9	19.43	0.992	598.26	30.79

#### Intensity (Candlepower) Summary at 25°C – Candelas



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# TEST REPORT

## RESULTS OF TESTS (cont'd)

**Test Condition: 120V, 60Hz For 700OWLYD9307xUNV**

Intensity (Candlepower) Summary at 25°C - Candelas

V \ H(°)	0	22.5	45	67.5	90
0	470.8	470.8	470.8	470.8	470.8
5	466.0	462.3	459.3	456.9	455.7
10	447.4	439.4	432.2	428.0	425.8
15	400.4	377.1	357.7	348.9	344.4
20	304.4	273.5	248.0	232.6	229.3
25	197.5	165.6	142.6	130.5	127.6
30	105.2	87.3	79.2	76.1	74.4
35	66.3	61.6	58.2	54.6	51.9
40	46.1	41.1	38.8	35.4	33.2
45	29.9	26.3	24.4	21.9	20.4
50	17.6	15.2	14.7	12.3	11.3
55	8.9	7.5	6.7	5.3	4.1
60	3.4	2.9	2.4	0.8	0.5
65	1.6	1.6	1.1	0.5	0.3
70	0.9	1.1	0.5	0.4	0.3
75	0.7	0.9	0.5	0.4	0.3
80	0.7	0.7	0.5	0.4	0.2
85	0.7	0.6	0.5	0.4	0.2
90	0.6	0.5	0.5	0.3	0.2
95	0.6	0.5	0.6	0.3	0.2
100	0.6	0.5	0.5	0.2	0.2
105	0.6	0.5	0.4	0.2	0.2
110	0.6	0.5	0.5	0.2	0.3
115	0.7	0.6	0.5	0.2	0.3
120	2.8	2.4	2.8	3.1	0.4
125	8.2	7.6	8.1	8.9	1.1
130	17.0	15.9	16.5	17.3	2.6
135	28.8	27.3	28.1	28.9	3.9
140	44.6	42.9	44.0	45.4	6.7
145	66.1	65.4	66.4	67.9	1.5
150	95.0	95.6	97.8	102.4	0.9
155	188.9	191.6	196.1	41.9	1.5
160	311.0	309.4	251.2	0.8	1.1
165	415.4	415.3	419.9	31.1	1.2
170	472.3	473.1	119.0	36.6	0.5
175	418.9	0.4	0.4	0.3	0.3
180	0.3	0.3	0.3	0.3	0.3

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## TEST REPORT

### RESULTS OF TESTS (cont'd)

**Test Condition: 120V, 60Hz For 700OWLYD9307xUNV**

#### Zonal Lumen Summary and Percentages at 25°C

Zone	Lumens (lm)	% Luminaire (%)
700OWLYD9307xUNV		
0-30	236.56	39.54
0-40	280.56	46.90
0-60	316.54	52.91
0-90	320.64	53.60
60-90	4.10	0.69
0-180	598.26	100.00

#### Beam Angle

**Total Beam Angle (°)**

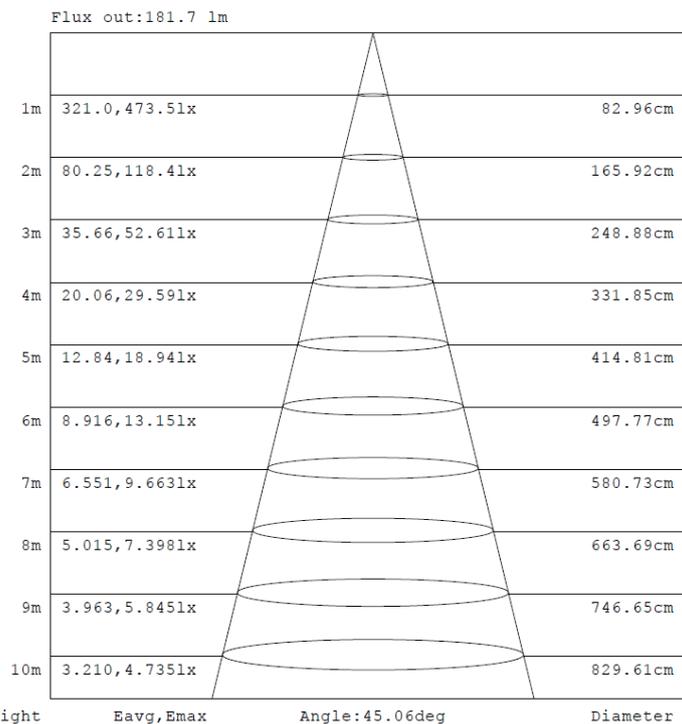
273.3

#### Illumination Plots

Model No.: 700OWLYD9307xUNV

Mount Height: 2.5 m

#### Illuminance - Cone of Light

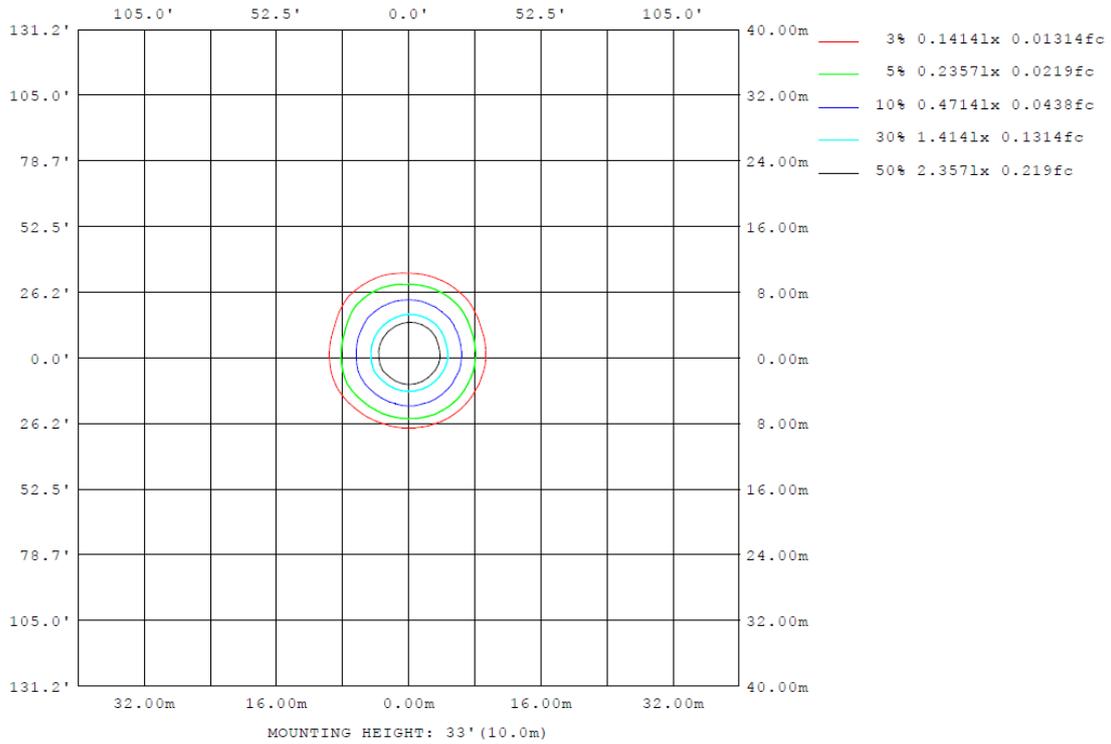


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**TEST REPORT**  
**RESULTS OF TESTS (cont'd)**

**Test Condition: 120V, 60Hz For 700OWLYD9307xUNV**

Model No.: 700OWLYD9307xUNV  
Mount Height: 2.5 m  
Isoillumination Plot



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## TEST REPORT

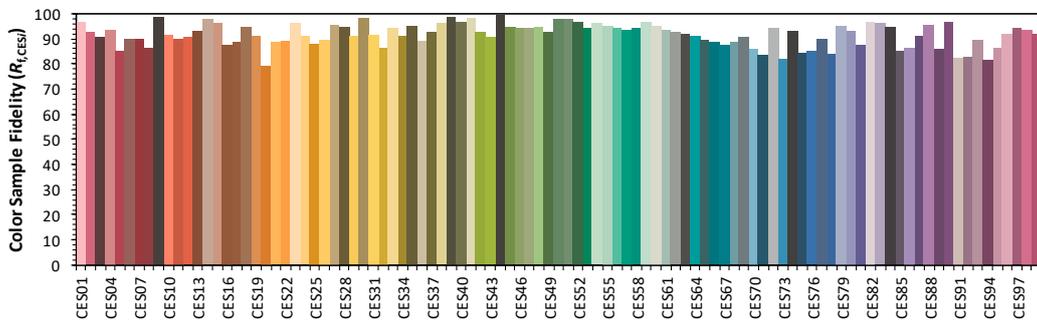
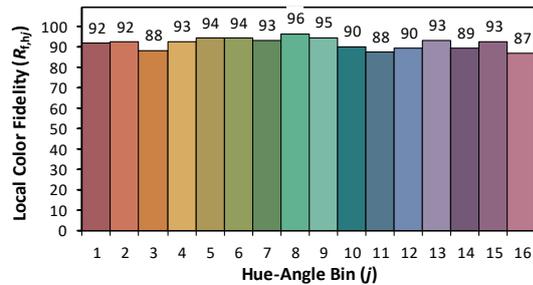
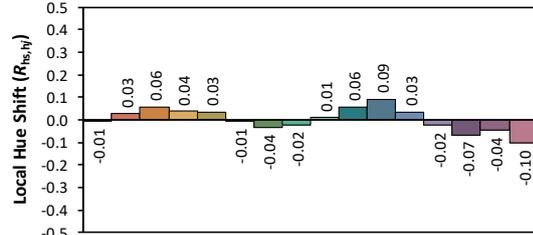
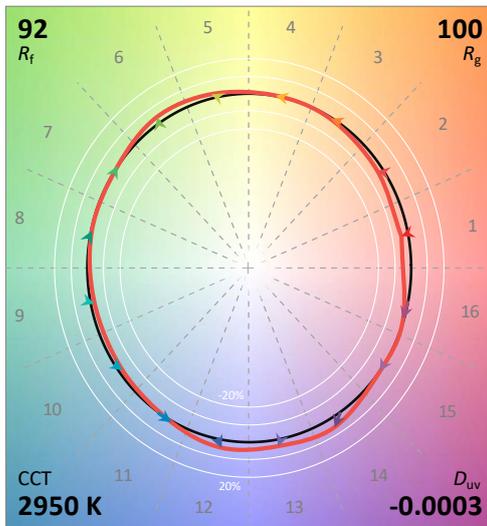
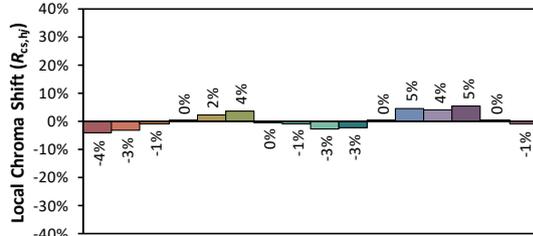
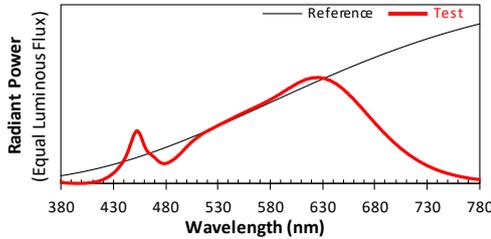
### RESULTS OF TESTS (cont'd)

Test Condition: 120V, 60Hz For 7000WLYD9307xUNV

### ANSI/IES TM-30-18 Color Rendition Report

Source: User SPD  
Date: 2022/8/2

Manufacturer: Visual Comfort and Company  
Model: 7000WLYD9307xUNV



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

$x$  0.4401  
 $y$  0.4044  
 $u'$  0.2525  
 $v'$  0.5220

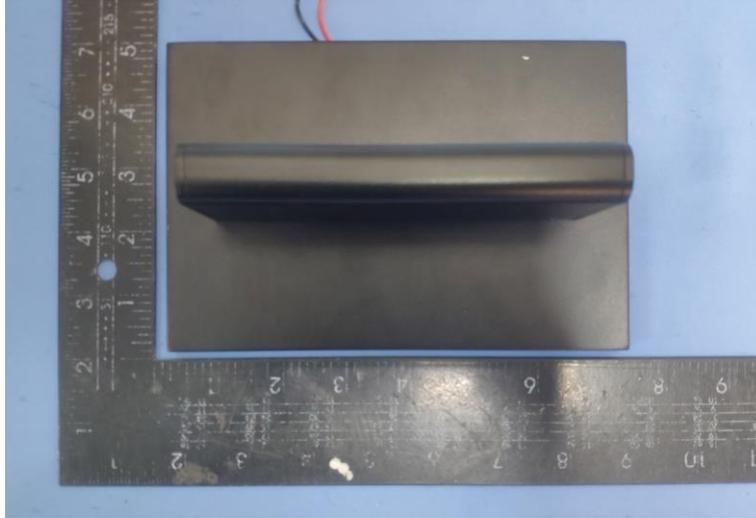
CIE 13.3-1995 (CRI) $R_a$ 92 $R_g$ 63
--

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

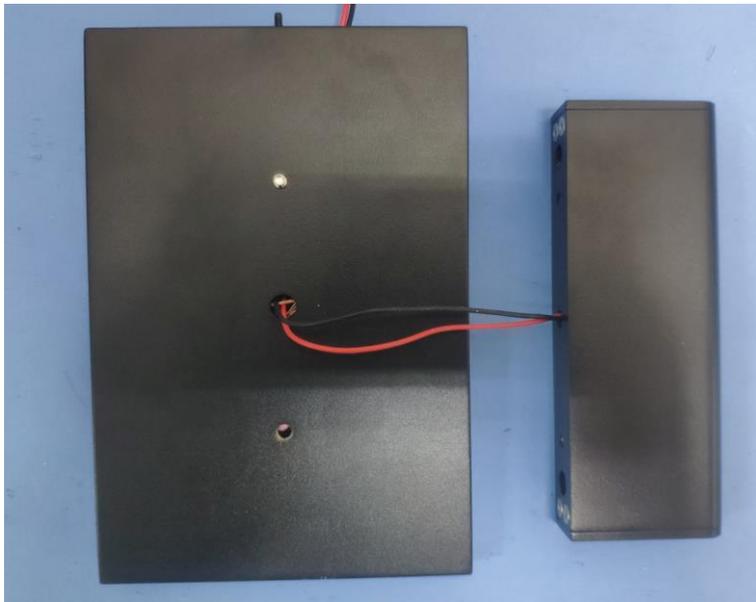
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**TEST REPORT**

**PRODUCT PICTURE (not to scale)**



**External view of 700OWLYD9307xUNV**

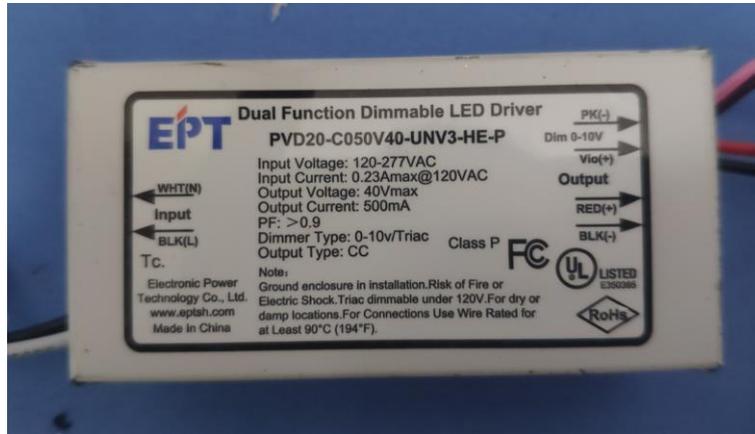


**External view of 700OWLYD9307xUNV**

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## TEST REPORT

### PRODUCT PICTURE (not to scale)



View of LED Driver PVD20-C050V40-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 \*\*\*\*\*