

# Visual Comfort and Company

## TEST REPORT

**SCOPE OF WORK**

LM-79 testing report

**REPORT NUMBER**

220706027GZU-010

**ISSUE DATE**

02 August 2022

**REVISION DATE**

None

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13

**DOCUMENT CONTROL NUMBER**

Report format for LM-79:2008\_F  
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Report No.: 220706027GZU-010

## TEST REPORT

TEST OF ONE LED LUMINAIRE

MODEL NO. 700OWLYD93013xUNV

RENDERED TO

Visual Comfort and Company

Contact Name: Tess Gallagher

7400 LINDER AVE. SKOKIE, IL, 60077

Email: Tgallagher@visualcomfortco.com

Phone No.: 8474104774

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 700OWLYD93013xUNV. The sample was received, in undamaged condition. The sample designation was S220706027-012.

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:	700OWLYD93013xUNV (Remark: "X" denote other appearance colors for the characters that change)
Description:	LED Luminaries
Brand Name:	--

#### Test Condition: 120V, 60Hz For 700OWLYD93013xUNV

Criteria	Result
Total Lumen Output	642.80 lm
Total Power	19.40 W
Luminaire Efficacy	33.14 lm/W
S/MH(C0/180)	0.69
S/MH(C90/270)	0.71
Correlated Color Temperature (CCT)	2959 K
Color Rendering Index (CRI)	92
R9	64
Chromaticity Coordinate (x)	0.4412
Chromaticity Coordinate (y)	0.4077
Chromaticity Coordinate (u')	0.2517
Chromaticity Coordinate (v')	0.5234

#### 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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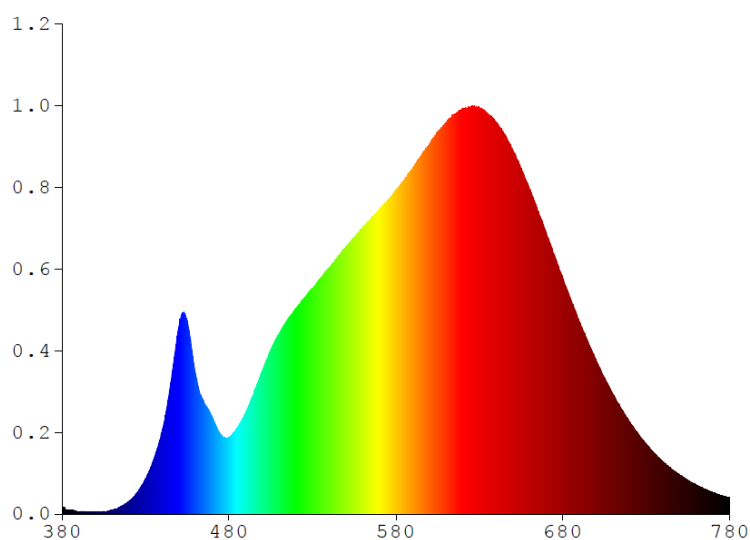
## TEST REPORT

### RESULTS OF TESTS

**Test Condition: 120V, 60Hz For 700OWLYD93013xUNV**

Spectral Distribution over Visible Wavelengths

nm	mW/nm	nm	mW/nm	nm	mW/nm	nm	mW/nm	nm	mW/nm
380	0.0685	480	0.8687	580	3.6702	680	2.6649	780	0.1902
385	0.0466	485	0.9778	585	3.7899	685	2.4088		
390	0.0280	490	1.1518	590	3.9159	690	2.1759		
395	0.0212	495	1.3827	595	4.0552	695	1.9451		
400	0.0217	500	1.6288	600	4.1878	700	1.7328		
405	0.0292	505	1.8588	605	4.3235	705	1.5383		
410	0.0461	510	2.0432	610	4.4325	710	1.3510		
415	0.0823	515	2.1978	615	4.5286	715	1.1885		
420	0.1434	520	2.3344	620	4.6015	720	1.0428		
425	0.2411	525	2.4462	625	4.6203	725	0.9075		
430	0.3976	530	2.5599	630	4.6013	730	0.7885		
435	0.6204	535	2.6797	635	4.5329	735	0.6851		
440	0.9493	540	2.7939	640	4.4292	740	0.5909		
445	1.4707	545	2.9074	645	4.2955	745	0.5092		
450	2.1186	550	3.0231	650	4.1208	750	0.4411		
455	2.1703	555	3.1322	655	3.9061	755	0.3800		
460	1.5710	560	3.2413	660	3.6775	760	0.3260		
465	1.2590	565	3.3456	665	3.4343	765	0.2837		
470	1.0959	570	3.4468	670	3.1807	770	0.2429		
475	0.9047	575	3.5522	675	2.8740	775	0.2110		



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# TEST REPORT

## RESULTS OF TESTS (cont'd)

**Test Condition: 120V, 60Hz For 700OWLYD93013xUNV**

Total operation burning time: 60 minutes

Stabilization time: 45 minutes

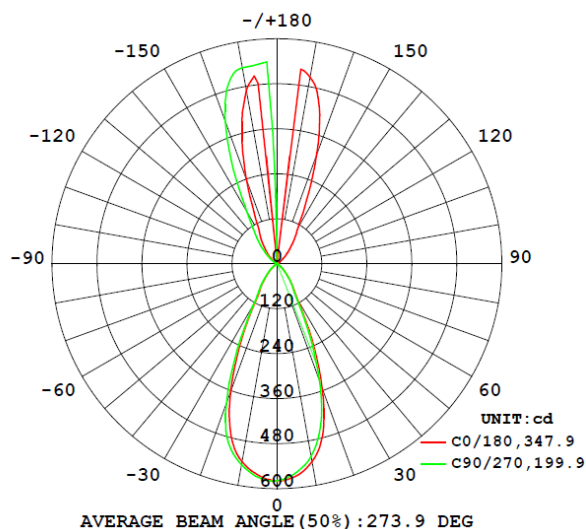
### Photometric Measurements at 25°C – Integrating Sphere Method

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')
700OWLYD93013xUNV								
S2207060 27-012	--	2959	92	64	0.4412	0.4077	0.2517	0.5234

### 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)
700OWLYD93013xUNV							
S2207060 27-012	--	120.0	162.7	19.40	0.993	642.80	33.14

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



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## TEST REPORT

### RESULTS OF TESTS (cont'd)

**Test Condition: 120V, 60Hz For 700OWLYD93013xUNV**

Intensity (Candlepower) Summary at 25°C - Candelas

V \ H(°)	0	22.5	45	67.5	90
0	578.5	578.5	578.5	578.5	578.5
5	569.4	565.3	562.6	560.5	560.9
10	536.3	528.5	523.5	521.8	522.3
15	472.4	460.9	452.1	447.8	449.2
20	352.9	341.3	334.1	330.8	331.7
25	220.6	210.5	201.1	197.0	197.5
30	110.4	105.2	102.1	102.0	102.1
35	73.5	71.2	70.6	71.2	71.0
40	48.1	46.2	46.0	46.6	46.4
45	30.4	28.9	28.8	29.1	28.9
50	17.3	16.4	16.4	16.6	16.3
55	8.0	7.6	7.6	7.7	7.4
60	2.3	2.2	2.2	2.1	0.4
65	0.6	0.5	0.5	0.4	0.3
70	0.5	0.5	0.4	0.3	0.3
75	0.5	0.5	0.4	0.3	0.3
80	0.5	0.4	0.3	0.2	0.2
85	0.5	0.4	0.3	0.2	0.2
90	0.5	0.4	0.3	0.2	0.2
95	0.5	0.4	0.3	0.2	0.2
100	0.6	0.5	0.3	0.1	0.2
105	0.8	0.7	0.3	0.1	0.2
110	1.2	1.1	0.3	0.1	0.2
115	2.1	1.8	0.8	0.1	0.2
120	4.1	3.4	2.9	0.4	0.2
125	8.6	7.8	5.9	5.7	0.2
130	18.8	16.2	14.0	12.8	0.2
135	35.8	30.6	24.1	11.0	0.3
140	55.4	46.2	40.1	10.1	0.5
145	81.2	69.5	62.4	1.3	0.6
150	113.5	100.7	92.0	0.7	0.7
155	188.5	157.7	137.2	1.0	0.6
160	310.6	266.9	230.2	104.2	0.6
165	436.0	395.6	357.3	326.3	0.6
170	506.4	489.0	7.1	0.5	0.5
175	13.2	0.5	0.4	0.4	0.4
180	0.4	0.4	0.4	0.4	0.4

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# TEST REPORT

## RESULTS OF TESTS (cont'd)

Test Condition: 120V, 60Hz For 700OWLYD93013xUNV

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

Zone	Lumens (lm)	% Luminaire (%)
700OWLYD93013xUNV		
0-30	284.02	44.18
0-40	331.00	51.49
0-60	362.39	56.38
0-90	363.84	56.60
60-90	1.45	0.22
0-180	642.80	100.00

### Beam Angle

Total Beam Angle (°)

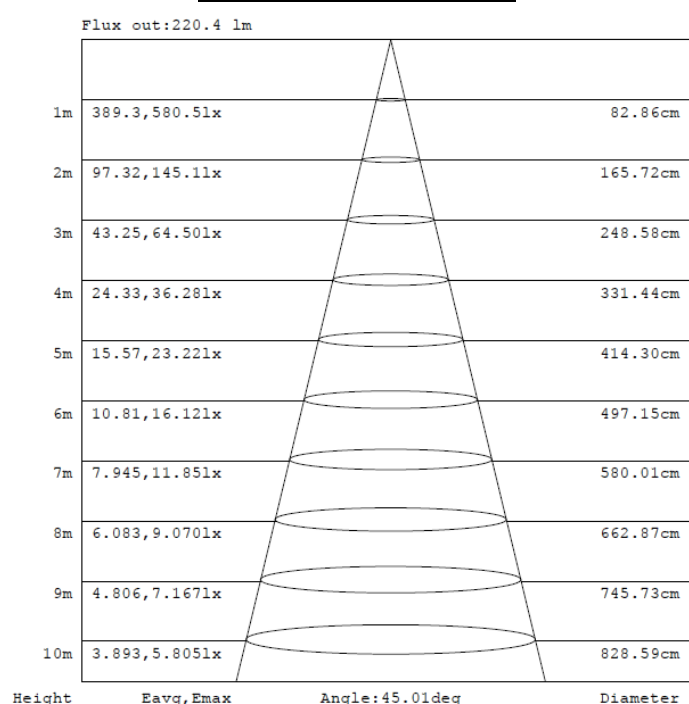
273.9

### Illumination Plots

Model No.: 700OWLYD93013xUNV

Mount Height: 2.5 m

#### Illuminance - Cone of Light



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# TEST REPORT

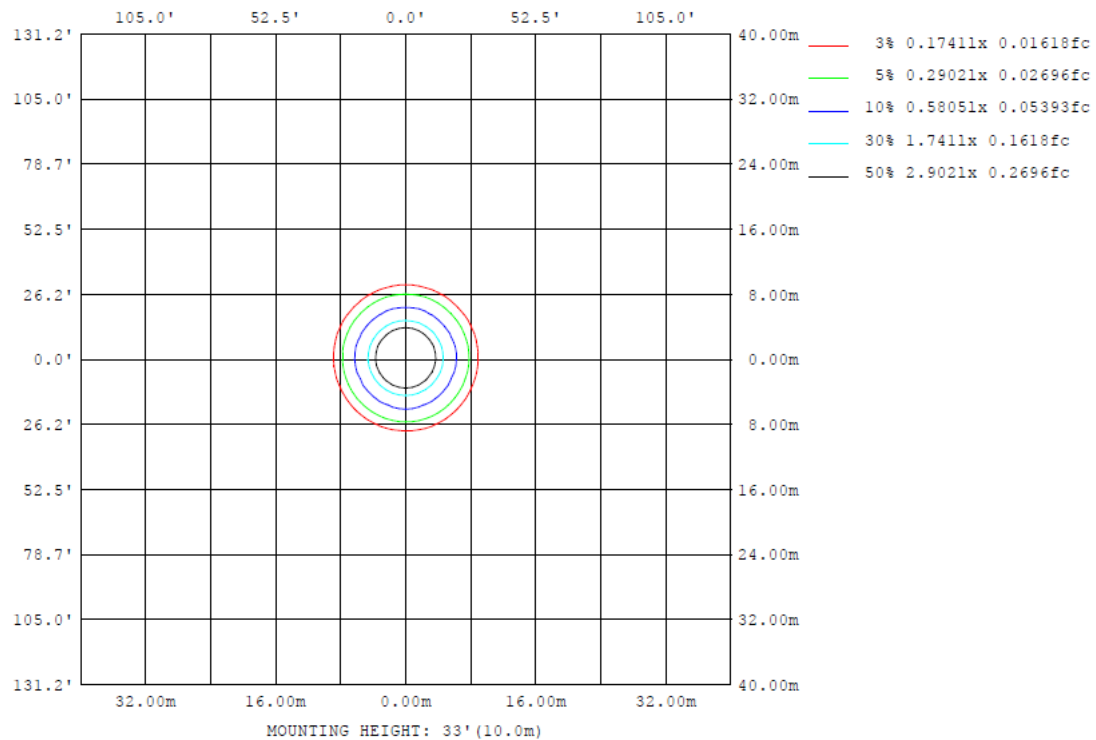
## RESULTS OF TESTS (cont'd)

**Test Condition: 120V, 60Hz For 7000WLYD93013xUNV**

Model No.: 7000WLYD93013xUNV

Mount Height: 2.5 m

Isoillumination Plot



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## TEST REPORT

### RESULTS OF TESTS (cont'd)

Test Condition: 120V, 60Hz For 7000WLYD93013xUNV

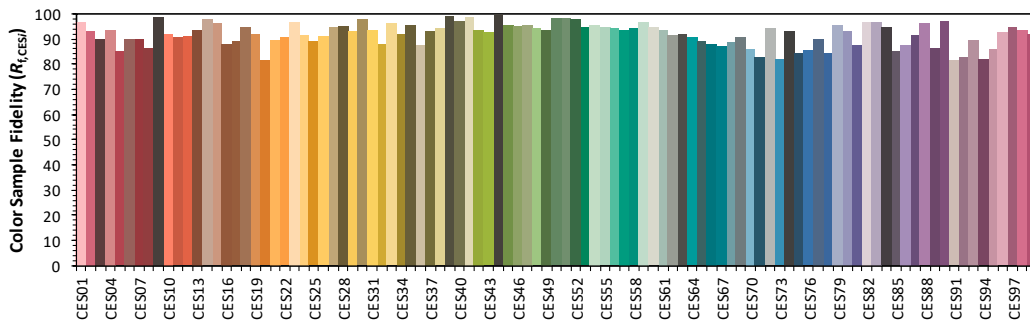
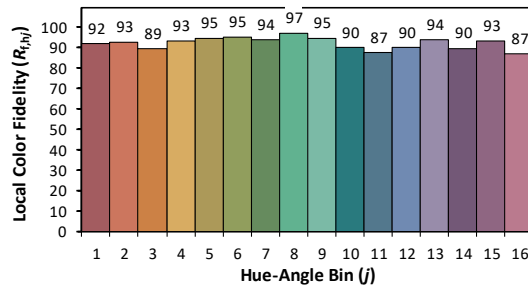
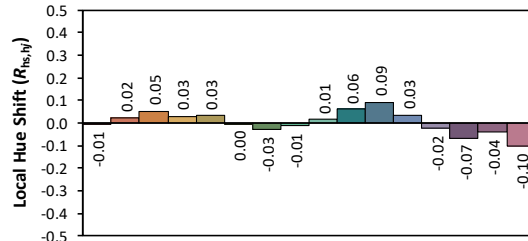
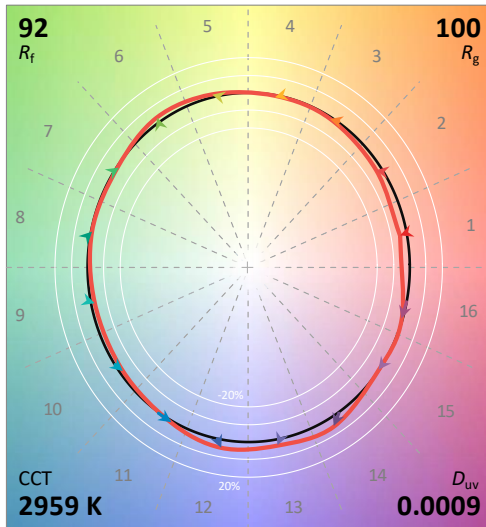
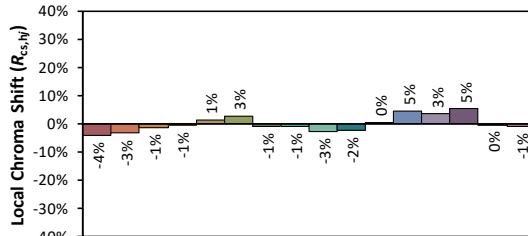
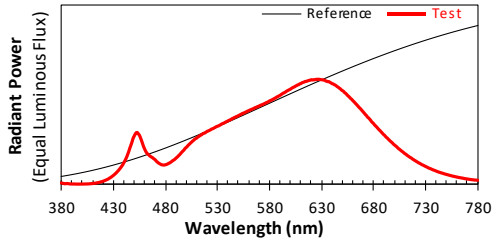
#### ANSI/IES TM-30-18 Color Rendition Report

Source: User SPD

Manufacturer: Visual Comfort and Company

Date: 2022/8/2

Model: 7000WLYD93013xUNV



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

$x$  0.4412  
 $y$  0.4077  
 $u'$  0.2517  
 $v'$  0.5234

CIE 13.3-1995  
(CRI)  
 $R_a$  92  
 $R_g$  64

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

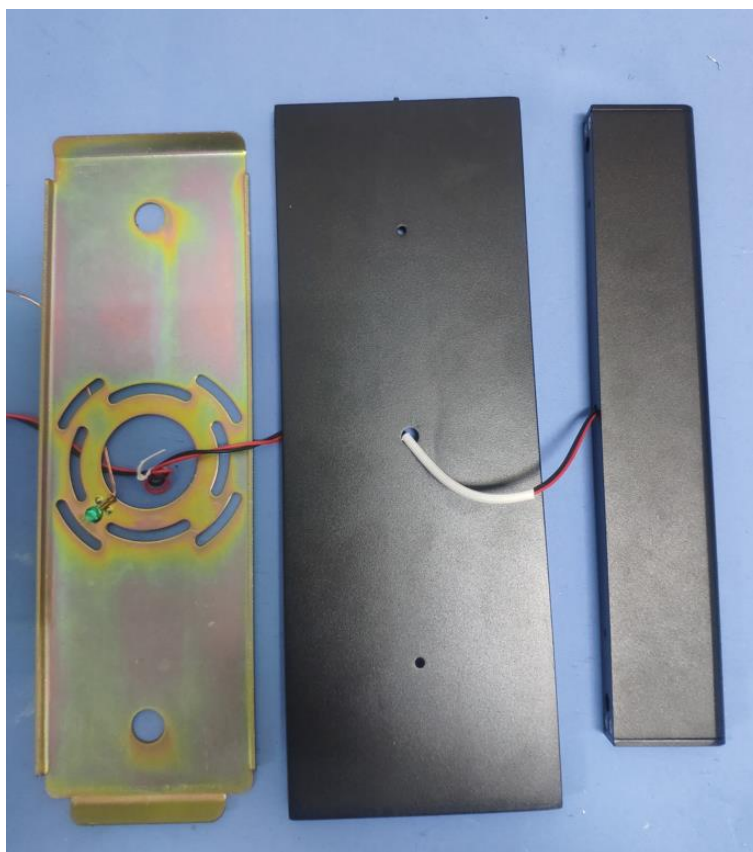
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## TEST REPORT

### PRODUCT PICTURE (not to scale)



**External view of 700OWLYD93013xUNV**

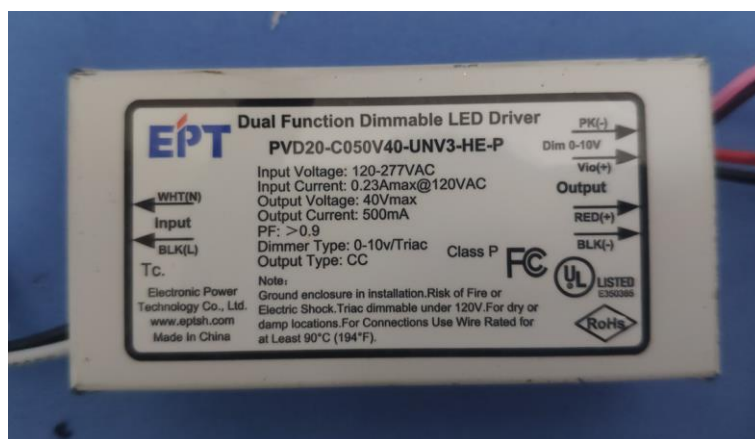


**External view of 700OWLYD93013xUNV**

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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 \*\*\*\*\*