

Visual Comfort and Company

TEST REPORT

SCOPE OF WORK

LM-79 testing report

REPORT NUMBER

220706027GZU-011

ISSUE DATE

03 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. 700OWLYD93020xUNV

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 700OWLYD93020xUNV. The sample was received, in undamaged condition. The sample designation was S220706027-013.

DATES OF TESTS: 03 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:	700OWLYD93020xUNV (Remark: "X" denote other appearance colors for the characters that change)
Description:	LED Luminaries
Brand Name:	--

Test Condition: 120V, 60Hz For 700OWLYD93020xUNV

Criteria	Result
Total Lumen Output	639.65 lm
Total Power	19.59 W
Luminaire Efficacy	32.65 lm/W
S/MH(C0/180)	0.66
S/MH(C90/270)	0.66
Correlated Color Temperature (CCT)	2951 K
Color Rendering Index (CRI)	92
R9	64
Chromaticity Coordinate (x)	0.4414
Chromaticity Coordinate (y)	0.4072
Chromaticity Coordinate (u')	0.2521
Chromaticity Coordinate (v')	0.5233

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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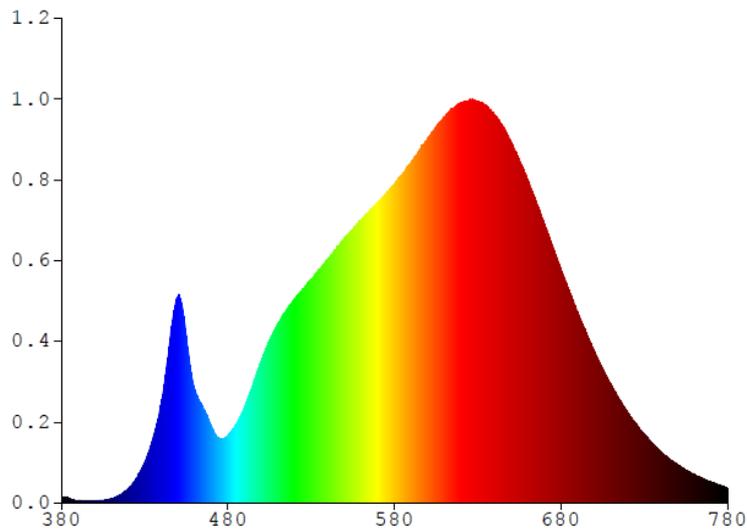
TEST REPORT

RESULTS OF TESTS

Test Condition: 120V, 60Hz For 700OWLYD93020xUNV

Spectral Distribution over Visible Wavelengths

nm	mW/nm								
380	0.0766	480	0.8753	580	4.1256	680	3.0231	780	0.1877
385	0.0548	485	1.0210	585	4.2640	685	2.7387		
390	0.0285	490	1.2430	590	4.4047	690	2.4698		
395	0.0281	495	1.5379	595	4.5629	695	2.2076		
400	0.0264	500	1.8402	600	4.7256	700	1.9674		
405	0.0355	505	2.1019	605	4.8575	705	1.7426		
410	0.0560	510	2.3226	610	4.9907	710	1.5353		
415	0.1015	515	2.4984	615	5.1066	715	1.3451		
420	0.1832	520	2.6473	620	5.1810	720	1.1759		
425	0.3204	525	2.7747	625	5.2163	725	1.0278		
430	0.5266	530	2.8913	630	5.1927	730	0.8904		
435	0.8385	535	3.0275	635	5.1425	735	0.7694		
440	1.3056	540	3.1579	640	5.0183	740	0.6649		
445	2.0725	545	3.2836	645	4.8774	745	0.5722		
450	2.6707	550	3.4215	650	4.6726	750	0.4953		
455	2.1350	555	3.5504	655	4.4374	755	0.4237		
460	1.4687	560	3.6591	660	4.1805	760	0.3690		
465	1.2278	565	3.7795	665	3.9087	765	0.3159		
470	0.9930	570	3.8842	670	3.6137	770	0.2738		
475	0.8324	575	4.0007	675	3.2631	775	0.2352		



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TEST REPORT

RESULTS OF TESTS (cont'd)

Test Condition: 120V, 60Hz For 700OWLYD93020xUNV

Total operation burning time: 60 minutes

Stabilization time: 45 minutes

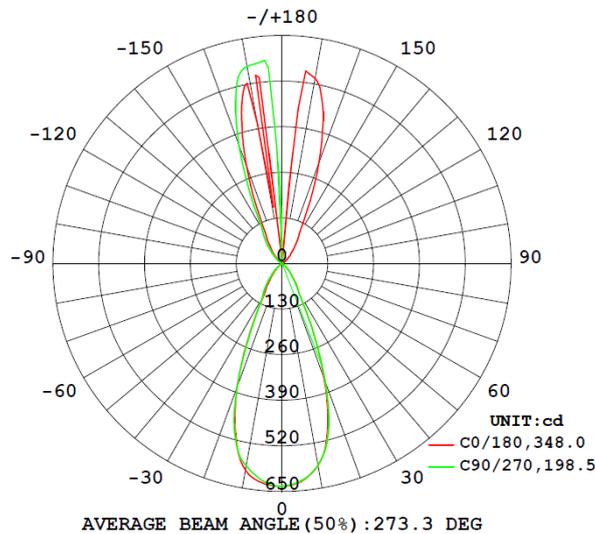
Photometric Measurements at 25°C – Integrating Sphere Method

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')
700OWLYD93020xUNV								
S2207060 27-013	--	2951	92	64	0.4414	0.4072	0.2521	0.5233

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)
700OWLYD93020xUNV							
S2207060 27-013	--	120.0	164.2	19.59	0.993	639.65	32.65

Intensity (Candlepower) Summary at 25°C – Candelas



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TEST REPORT

RESULTS OF TESTS (cont'd)

Test Condition: 120V, 60Hz For 700OWLYD93020xUNV

Intensity (Candlepower) Summary at 25°C - Candelas

V \ H(°)	0	22.5	45	67.5	90
0	635.3	635.3	635.3	635.3	635.3
5	623.7	623.2	622.5	621.0	621.2
10	585.4	585.0	584.0	583.0	584.3
15	498.4	500.4	503.3	503.5	505.8
20	349.9	348.6	353.1	355.3	358.6
25	198.5	194.0	193.0	193.6	198.2
30	96.6	93.5	93.0	94.4	96.5
35	65.8	63.4	62.2	61.7	62.3
40	40.8	38.8	38.2	37.7	37.9
45	24.1	22.5	22.2	22.0	22.1
50	12.3	11.3	11.0	11.1	11.1
55	4.6	3.9	3.8	4.0	3.8
60	0.7	0.8	0.7	0.6	0.5
65	0.4	0.6	0.5	0.5	0.4
70	0.4	0.5	0.5	0.4	0.4
75	0.5	0.5	0.4	0.4	0.3
80	0.5	0.5	0.4	0.4	0.3
85	0.4	0.4	0.4	0.3	0.3
90	0.4	0.4	0.4	0.3	0.3
95	0.4	0.4	0.4	0.3	0.2
100	0.4	0.4	0.4	0.3	0.2
105	0.8	0.8	0.3	0.3	0.2
110	1.4	1.4	0.3	0.3	0.2
115	2.4	2.3	0.6	0.3	0.2
120	4.0	3.7	3.5	0.6	0.3
125	7.8	6.8	6.0	5.6	0.4
130	15.9	14.2	12.6	12.9	0.6
135	28.0	25.0	22.7	22.9	0.6
140	44.6	40.4	37.3	37.5	0.8
145	68.2	62.1	58.1	58.1	0.8
150	98.0	93.5	89.6	89.8	0.9
155	170.3	158.1	144.4	136.5	1.0
160	306.3	284.2	262.0	245.8	0.9
165	449.0	423.3	401.8	362.7	0.6
170	537.0	526.8	87.1	0.5	0.5
175	226.1	31.4	0.4	0.4	0.4
180	0.3	0.3	0.3	0.3	0.4

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TEST REPORT RESULTS OF TESTS (cont'd)

Test Condition: 120V, 60Hz For 700OWLYD93020xUNV

Zonal Lumen Summary and Percentages at 25°C

Zone	Lumens (lm)	% Luminaire (%)
700OWLYD93020xUNV		
0-30	291.55	45.58
0-40	335.70	52.48
0-60	363.08	56.76
0-90	364.31	56.95
60-90	1.00	0.19
0-180	639.65	100.00

Beam Angle

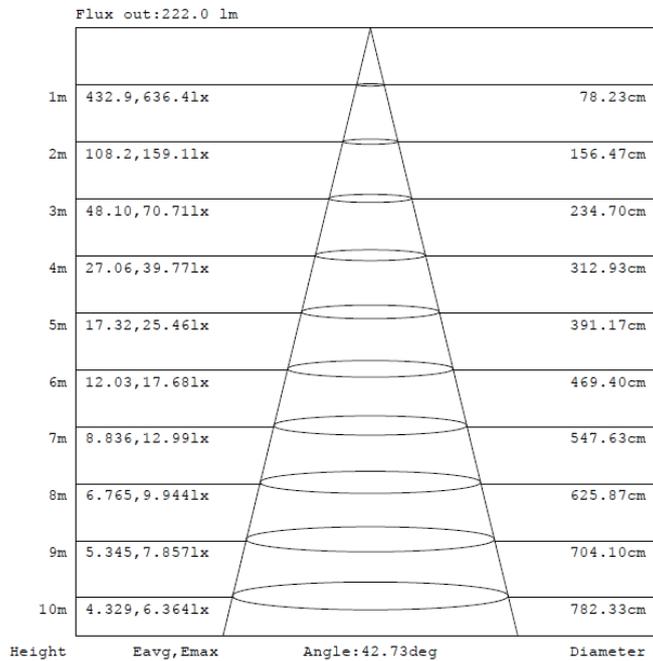
Total Beam Angle (°)
273.3

Illumination Plots

Model No.: 700OWLYD93020xUNV

Mount Height: 2.5 m

Illuminance - Cone of Light

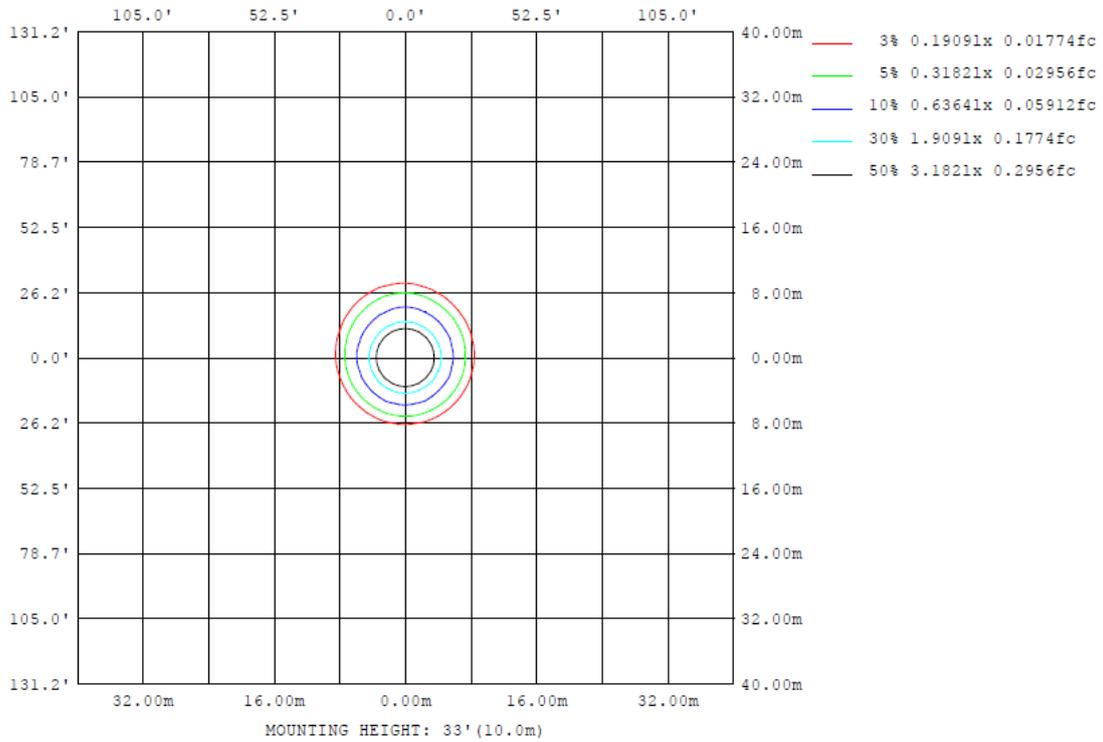


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TEST REPORT
RESULTS OF TESTS (cont'd)

Test Condition: 120V, 60Hz For 700OWLYD93020xUNV

Model No.: 700OWLYD93020xUNV
Mount Height: 2.5 m
Isoillumination Plot



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TEST REPORT

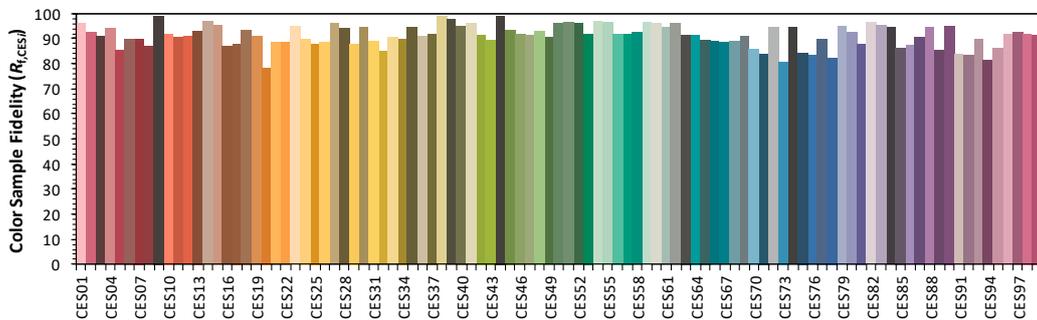
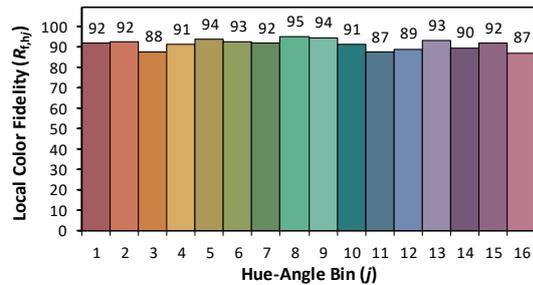
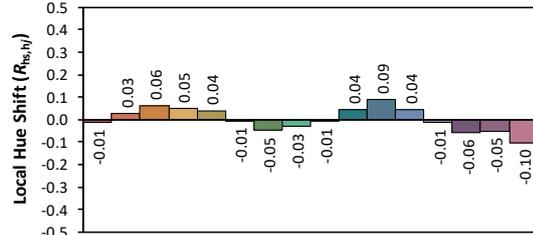
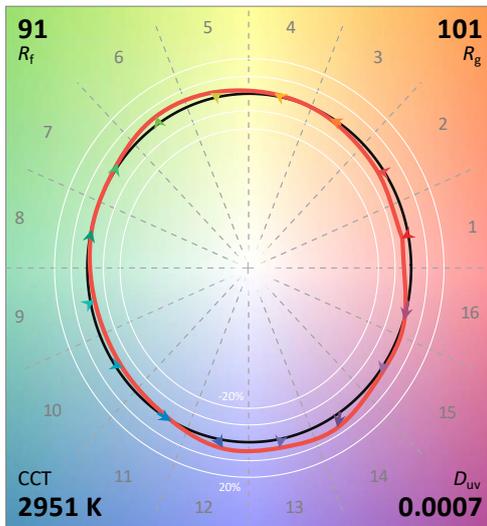
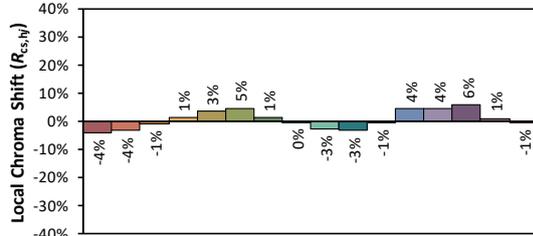
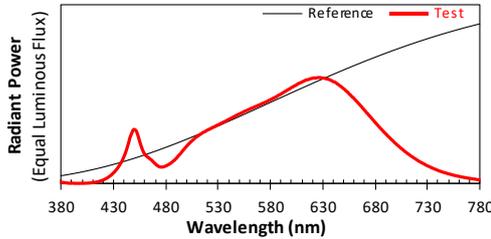
RESULTS OF TESTS (cont'd)

Test Condition: 120V, 60Hz For 7000WLYD93020xUNV

ANSI/IES TM-30-18 Color Rendition Report

Source: User SPD
Date: 2022/8/3

Manufacturer: Visual Comfort and Company
Model: 7000WLYD93020xUNV



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

x 0.4414
 y 0.4072
 u' 0.2521
 v' 0.5233

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.

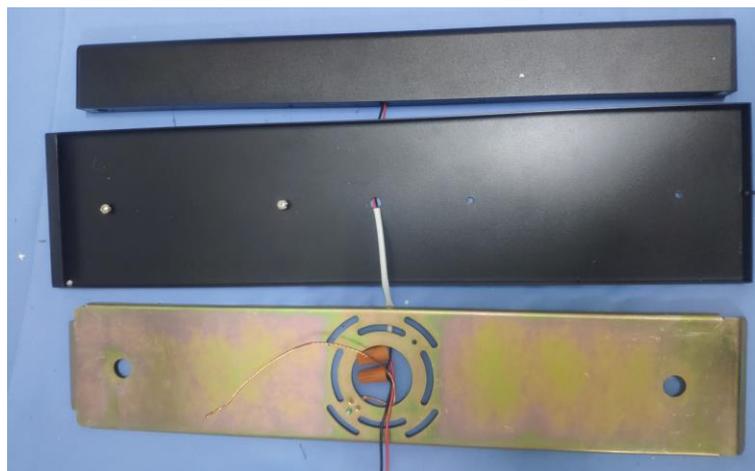
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TEST REPORT

PRODUCT PICTURE (not to scale)



External view of 700WLYD93020xUNV



External view of 700WLYD93020xUNV

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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 *****