

Visual Comfort and Company

TEST REPORT

SCOPE OF WORK

LM-79 testing report

REPORT NUMBER

220401100GZU-016

ISSUE DATE

07 April 2022

REVISION DATE

None

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13

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Report No.: 220401100GZU-016

TEST REPORT

TEST OF ONE LED LUMINAIRE

MODEL NO. 700WSKISWWX-LED930

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 700WSKISWWX-LED930. The sample was received, in undamaged condition. The sample designation was S220401100-016.

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:	700WSKISWWX-LED930 (Remark: "XX" denote other appearance colors for the characters that change)
Description:	LED Luminaries
Brand Name:	--

Test Condition: 120V, 60Hz For 700WSKISWWX-LED930

Criteria	Result
Total Lumen Output	943.5 lm
Total Power	11.8 W
Luminaire Efficacy	80.30 lm/W
S/MH(C0/180)	1.25
S/MH(C90/270)	1.35
Correlated Color Temperature (CCT)	2916 K
Color Rendering Index (CRI)	93
R9	63
Chromaticity Coordinate (x)	0.4433
Chromaticity Coordinate (y)	0.4065
Chromaticity Coordinate (u')	0.2536
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
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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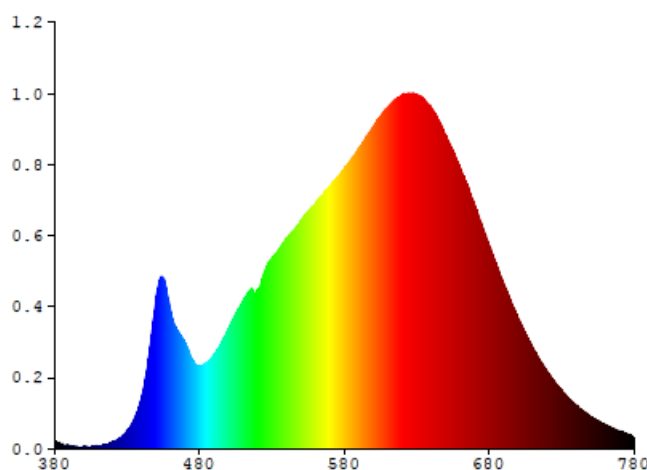
TEST REPORT

RESULTS OF TESTS

Test Condition: 120V, 60Hz For 700WSKISWWX-LED930

Spectral Distribution over Visible Wavelengths

nm	mW/nm	nm	mW/nm	nm	mW/nm	nm	mW/nm	nm	mW/nm
380	0.0614	480	0.7060	580	2.4093	680	1.7414	780	0.0870
385	0.0337	485	0.7401	585	2.4924	685	1.5775		
390	0.0210	490	0.8094	590	2.5840	690	1.4156		
395	0.0154	495	0.9099	595	2.6846	695	1.2653		
400	0.0141	500	1.0347	600	2.7763	700	1.1191		
405	0.0139	505	1.1580	605	2.8559	705	0.9882		
410	0.0223	510	1.2711	610	2.9380	710	0.8678		
415	0.0323	515	1.3679	615	2.9999	715	0.7584		
420	0.0567	520	1.3602	620	3.0460	720	0.6624		
425	0.0902	525	1.5264	625	3.0551	725	0.5737		
430	0.1530	530	1.6358	630	3.0397	730	0.5000		
435	0.2544	535	1.7129	635	3.0030	735	0.4305		
440	0.4422	540	1.8027	640	2.9254	740	0.3718		
445	0.7952	545	1.8776	645	2.8239	745	0.3187		
450	1.2877	550	1.9642	650	2.6933	750	0.2737		
455	1.4631	555	2.0454	655	2.5604	755	0.2360		
460	1.1815	560	2.1151	660	2.4113	760	0.2047		
465	1.0001	565	2.1840	665	2.2592	765	0.1748		
470	0.9046	570	2.2562	670	2.0894	770	0.1492		
475	0.7649	575	2.3358	675	1.8795	775	0.1271		



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TEST REPORT

RESULTS OF TESTS (cont'd)

Test Condition: 120V, 60Hz For 700WSKISWWX-LED930

Total operation burning time: 60 minutes

Stabilization time: 45 minutes

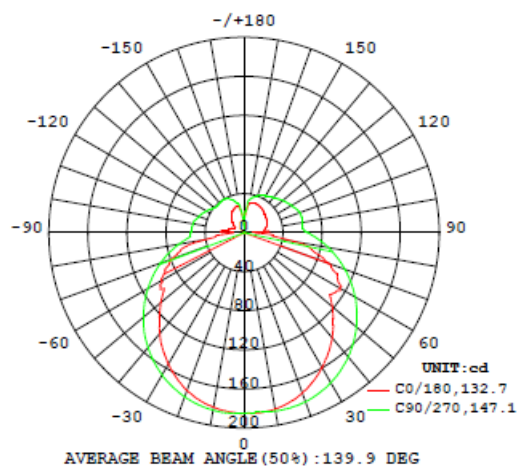
Photometric Measurements at 25°C – Integrating Sphere Method

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')
700WSKISWWX-LED930								
S2204011 00-016	--	2916	93	63	0.4433	0.4065	0.2536	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	Lumen
						Luminous Flux (Lumens)	Efficacy (Lumens Per Watt)
700WSKISWWX-LED930							
S2204011 00-016	--	120.0	98.8	11.8	0.991	943.5	80.30

Intensity (Candlepower) Summary at 25°C – Candelas



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TEST REPORT

RESULTS OF TESTS (cont'd)

Test Condition: 120V, 60Hz For 700WSKISWWX-LED930

Intensity (Candlepower) Summary at 25°C - Candelas

V \ H(°)	0	22.5	45	67.5	90
0	185.1	185.1	184.9	184.9	184.8
5	184.8	184.5	184.3	184.4	184.3
10	183.3	183.2	184.3	185.4	185.3
15	179.8	180.9	183.9	185.2	185.3
20	174.6	177.4	181.7	184.0	184.0
25	167.8	172.3	178.2	181.4	181.3
30	159.6	165.7	172.9	177.5	177.4
35	150.4	157.9	166.6	172.2	172.3
40	140.5	149.5	159.0	165.6	166.0
45	129.4	139.8	150.4	158.0	158.6
50	117.9	129.5	141.0	149.4	150.3
55	109.7	118.4	130.8	140.0	141.1
60	113.0	116.9	120.0	129.8	131.3
65	104.9	116.4	108.6	119.1	120.8
70	92.2	106.4	98.9	108.0	109.9
75	73.3	88.4	86.6	96.7	98.8
80	52.2	63.9	74.8	85.5	87.6
85	30.4	49.6	63.6	74.1	76.2
90	8.9	37.7	52.7	62.9	65.1
95	21.9	38.2	49.1	58.3	60.5
100	21.6	38.4	49.5	58.7	60.8
105	23.8	36.5	49.6	59.1	61.1
110	25.2	35.7	47.8	58.5	60.7
115	26.0	35.5	46.5	56.1	58.4
120	26.7	35.7	45.4	54.1	56.0
125	27.4	35.8	44.1	52.1	53.8
130	28.2	36.1	43.4	49.9	51.5
135	29.1	36.1	42.8	48.1	49.2
140	30.1	36.2	42.2	46.5	47.1
145	30.9	36.2	41.9	45.1	45.2
150	31.5	36.0	41.1	43.8	43.8
155	32.0	35.6	40.0	42.3	42.2
160	32.3	35.1	39.2	40.3	40.2
165	31.9	34.4	37.5	38.0	37.9
170	30.3	32.7	34.3	35.3	34.9
175	21.7	23.3	26.4	25.7	22.3
180	0.9	0.2	0.0	1.3	3.6

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TEST REPORT

RESULTS OF TESTS (cont'd)

Test Condition: 120V, 60Hz For 700WSKISWWX-LED930

Zonal Lumen Summary and Percentages at 25°C

Zone	Lumens (lm)	% Luminaire (%)
700WSKISWWX-LED930		
0-30	148.5	15.7
0-40	248.0	26.3
0-60	464.8	49.3
0-90	706.0	74.8
60-90	241.2	25.5
0-180	943.5	100

Beam Angle

Total Beam Angle (°)

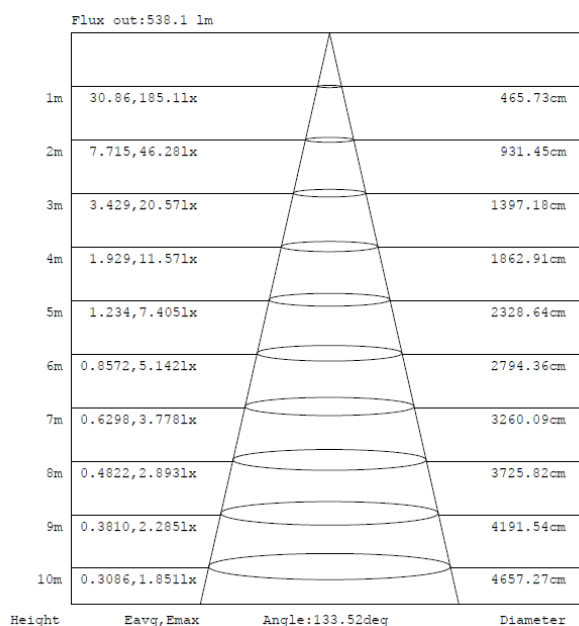
139.9

Illumination Plots

Model No.: 700WSKISWWX-LED930

Mount Height: 2.5 m

Illuminance - Cone of Light



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TEST REPORT

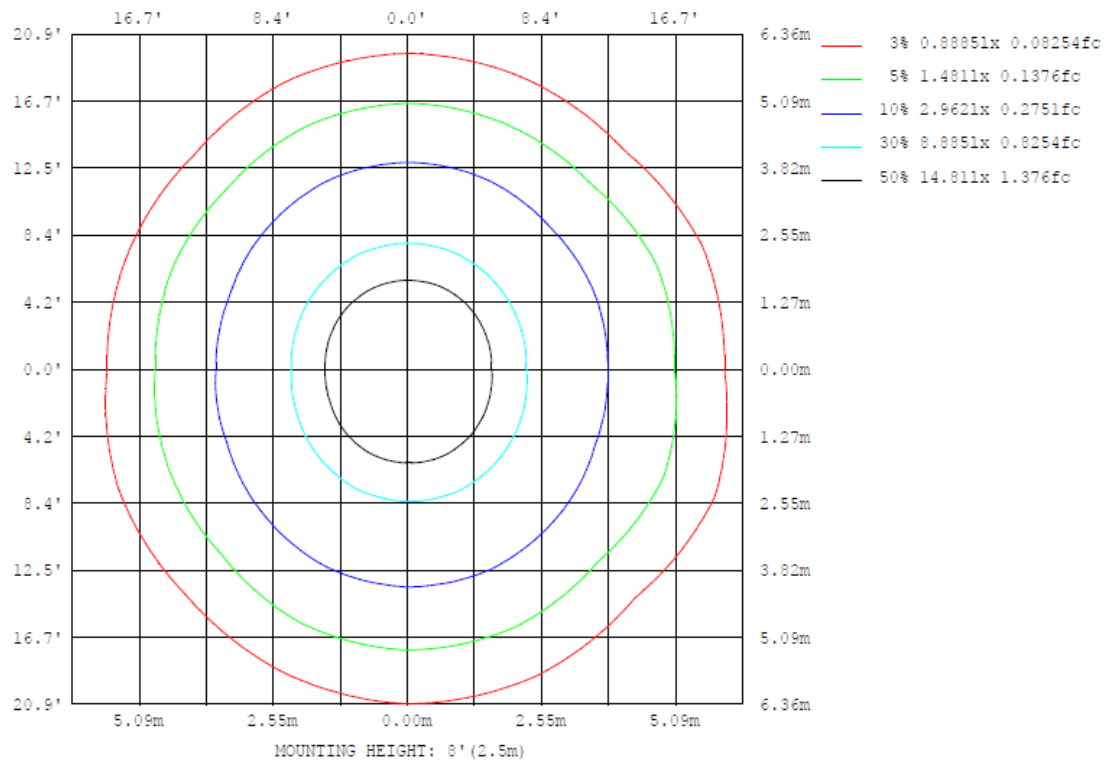
RESULTS OF TESTS (cont'd)

Test Condition: 120V, 60Hz For 700WSKISWWX-LED930

Model No.: 700WSKISWWX-LED930

Mount Height: 2.5 m

Isoillumination Plot



TEST REPORT

RESULTS OF TESTS (cont'd)

Test Condition: 120V, 60Hz For 700WSKISWWX-LED930

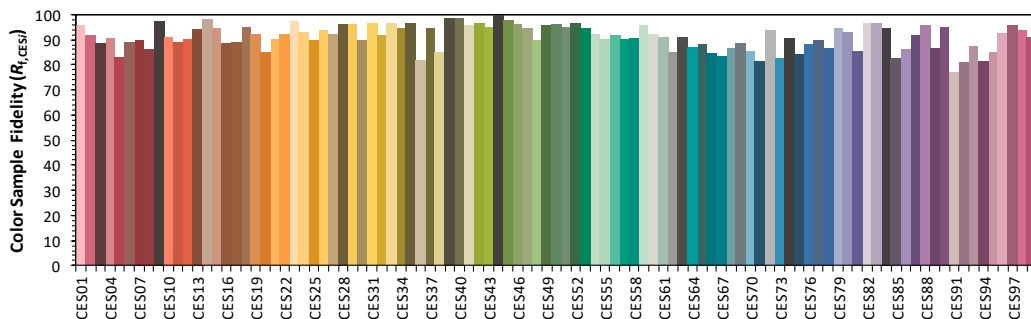
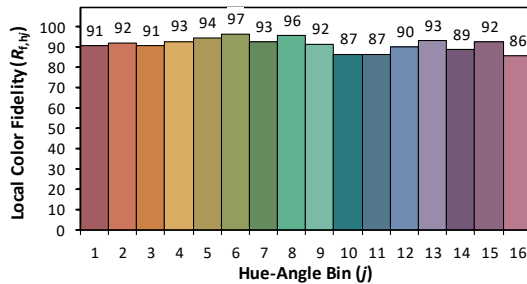
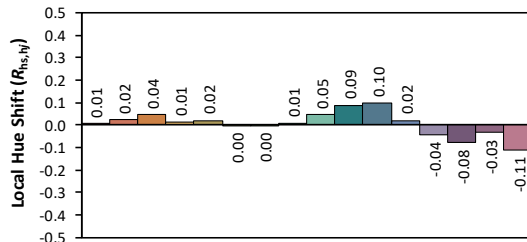
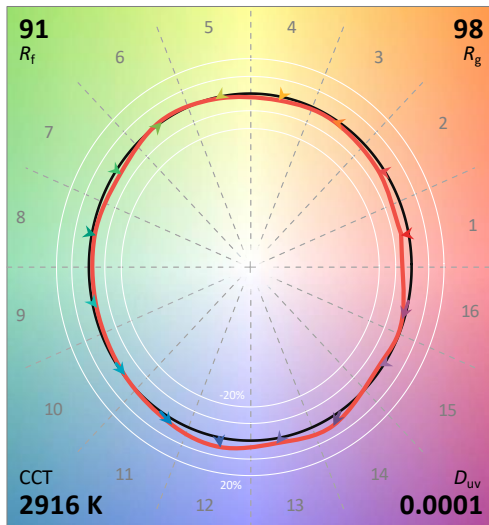
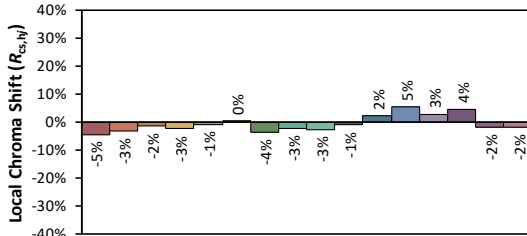
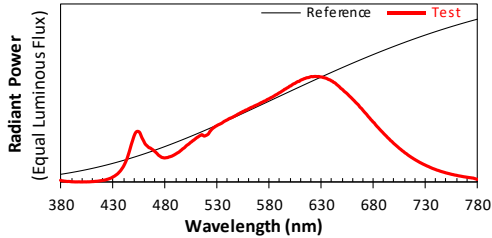
ANSI/IES TM-30-18 Color Rendition Report

Source: User SPD

Manufacturer: Visual Comfort and Company

Date: 2022/4/7

Model: 700WSKISWWX-LED930



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

x 0.4433
 y 0.4065
 u' 0.2536
 v' 0.5233

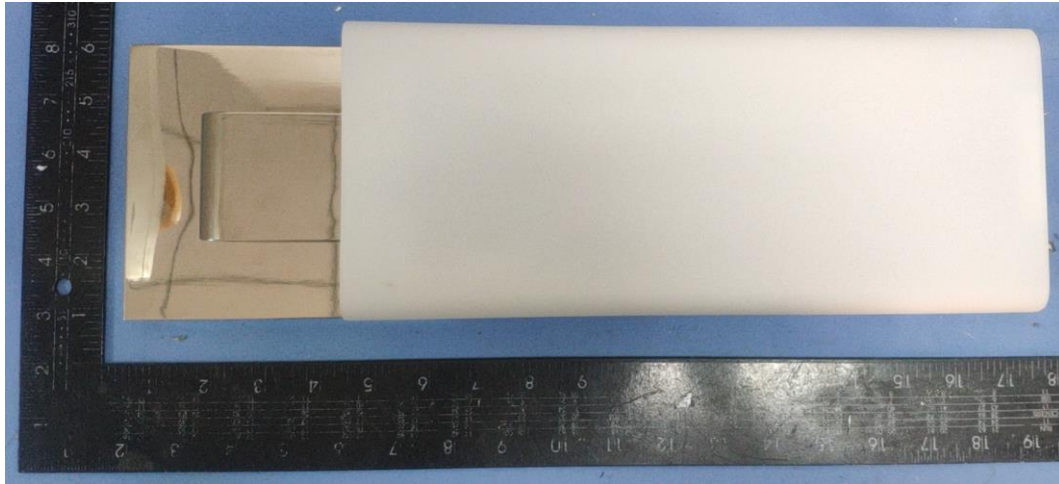
CIE 13.3-1995
(CRI)
 R_a 93
 R_g 63

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

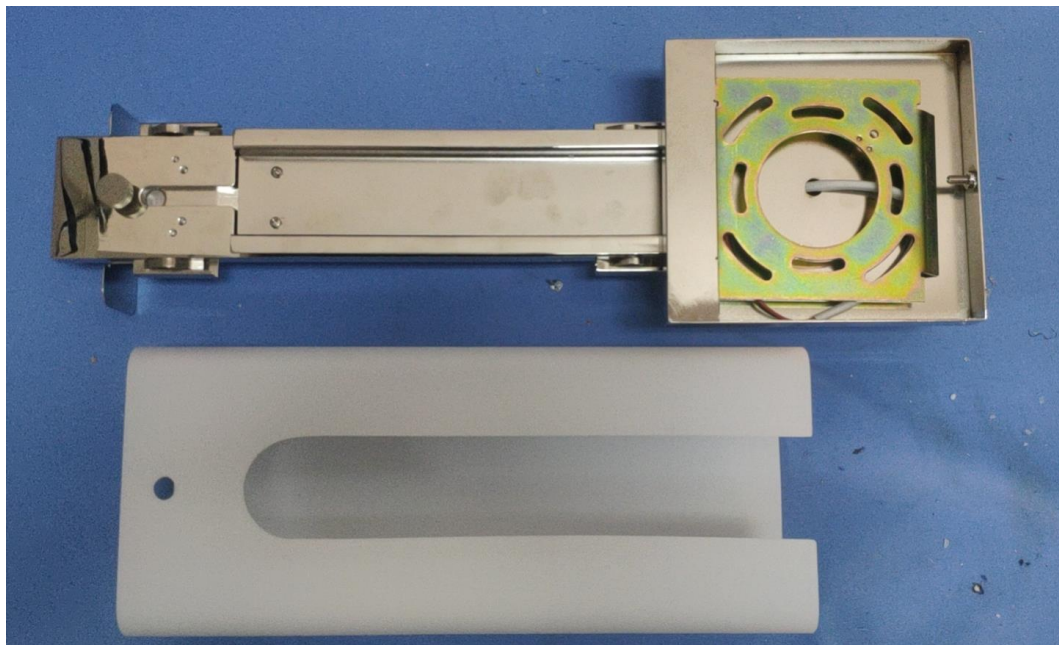
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TEST REPORT

PRODUCT PICTURE (not to scale)



External view of 700WSKISWWX-LED930



External view of 700WSKISWWX-LED930

***** End of Page *****

TEST REPORT

PRODUCT PICTURE (not to scale)



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



View of LED

In Charge Of Tests:

Report Reviewed By

Done Ye

Shelley Ying

Done Ye
Engineer

Shelley Ying
Reviewer

Attachment: None

***** End of Report *****