

Visual Comfort and Company

TEST REPORT

SCOPE OF WORK

LM-79 testing report

REPORT NUMBER

220706027GZU-007

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None

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Report No.: 220706027GZU-007

TEST REPORT

TEST OF ONE LED LUMINAIRE

MODEL NO. 700PLUF12x-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: 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 700PLUF12x-LED927. The sample was received, in undamaged condition. The sample designation was S220706027-008.

DATES OF TESTS: 01 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:	700PLUF12x-LED927 (Remark: "X" denote other appearance colors for the characters that change)
Description:	LED Luminaries
Brand Name:	--

Test Condition: 120V, 60Hz For 700PLUF12x-LED927

Criteria	Result
Total Lumen Output	507.86 lm
Total Power	9.93 W
Luminaire Efficacy	51.14 lm/W
S/MH(C0/180)	1.40
S/MH(C90/270)	19.73
Correlated Color Temperature (CCT)	2243 K
Color Rendering Index (CRI)	92
R9	94
Chromaticity Coordinate (x)	0.4905
Chromaticity Coordinate (y)	0.3994
Chromaticity Coordinate (u')	0.2881
Chromaticity Coordinate (v')	0.5277

Remark:

Measurement uncertainty for applicable tests has been established.

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

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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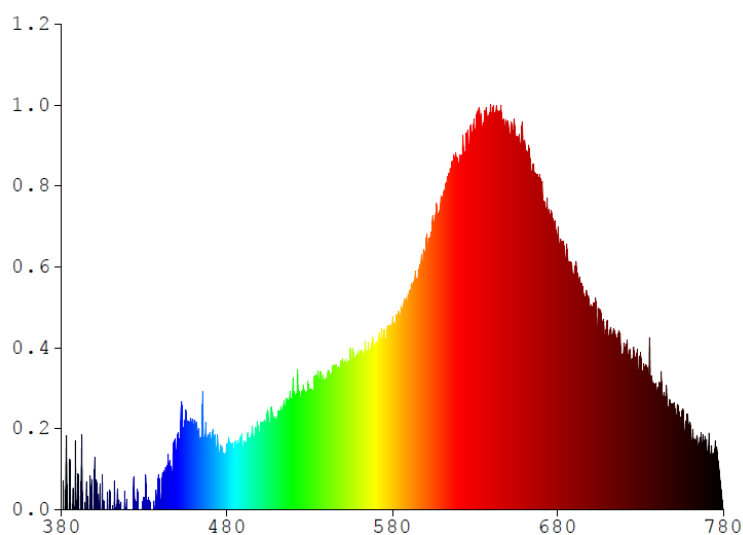
TEST REPORT

RESULTS OF TESTS

Test Condition: 120V, 60Hz For 700PLUF12x-LED927

Spectral Distribution over Visible Wavelengths

nm	mW/nm	nm	mW/nm	nm	mW/nm	nm	mW/nm	nm	mW/nm
380	0.0000	480	0.0009	580	0.0024	680	0.0036	780	0.0000
385	0.0007	485	0.0009	585	0.0026	685	0.0033		
390	0.0005	490	0.0009	590	0.0028	690	0.0031		
395	0.0004	495	0.0010	595	0.0030	695	0.0029		
400	0.0007	500	0.0011	600	0.0033	700	0.0027		
405	0.0000	505	0.0012	605	0.0037	705	0.0026		
410	0.0000	510	0.0010	610	0.0041	710	0.0024		
415	0.0000	515	0.0013	615	0.0044	715	0.0023		
420	0.0000	520	0.0017	620	0.0045	720	0.0022		
425	0.0001	525	0.0016	625	0.0049	725	0.0020		
430	0.0002	530	0.0015	630	0.0050	730	0.0021		
435	0.0000	535	0.0018	635	0.0050	735	0.0017		
440	0.0001	540	0.0017	640	0.0052	740	0.0015		
445	0.0005	545	0.0019	645	0.0051	745	0.0015		
450	0.0008	550	0.0019	650	0.0051	750	0.0014		
455	0.0012	555	0.0021	655	0.0049	755	0.0013		
460	0.0009	560	0.0020	660	0.0048	760	0.0011		
465	0.0010	565	0.0020	665	0.0045	765	0.0008		
470	0.0009	570	0.0022	670	0.0041	770	0.0008		
475	0.0008	575	0.0024	675	0.0039	775	0.0008		



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TEST REPORT

RESULTS OF TESTS (cont'd)

Test Condition: 120V, 60Hz For 700PLUF12x-LED927

Total operation burning time: 60 minutes

Stabilization time: 45 minutes

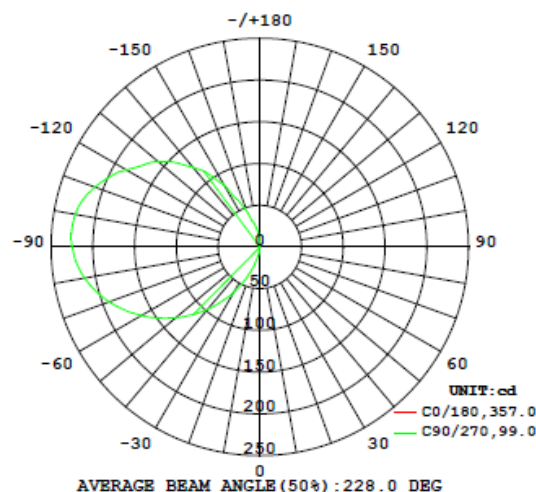
Photometric Measurements at 25°C – Integrating Sphere Method

Intertek Sample No.	Base Orientation	Correlated Color Temperatur e (K)	CRI	R9	CIE 31'	CIE 31'	CIE 76'	CIE 76'
					Chromaticit y	Chromaticit y	Chromaticit y	Chromaticit y
					Coordinate (x)	Coordinate (y)	Coordinate (u')	Coordinate (v')
700PLUF12x-LED927								
S2207060 27-008	--	2243	92	94	0.4905	0.3994	0.2881	0.5277

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)
700PLUF12x-LED927							
S2207060 27-008	--	120.0	84.3	9.93	0.980	507.86	51.14

Intensity (Candlepower) Summary at 25°C – Candelas



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TEST REPORT

RESULTS OF TESTS (cont'd)

Test Condition: 120V, 60Hz For 700PLUF12x-LED927

Intensity (Candlepower) Summary at 25°C - Candelas

V \ H(°)	0	22.5	45	67.5	90
0	0.3	0.3	0.3	0.3	0.3
5	0.3	0.3	0.3	0.3	0.3
10	0.3	0.3	0.3	0.3	0.3
15	0.3	0.3	0.3	0.3	0.3
20	0.3	0.3	0.3	0.3	0.3
25	0.3	0.3	0.3	0.3	0.3
30	0.3	0.3	0.3	0.3	0.3
35	0.3	0.3	0.3	0.3	0.3
40	0.3	0.3	0.3	0.3	0.3
45	0.3	0.3	0.3	0.3	0.3
50	0.3	0.3	0.3	0.3	0.3
55	0.3	0.3	0.3	0.3	0.3
60	0.3	0.3	0.3	0.3	0.3
65	0.3	0.3	0.3	0.3	0.3
70	0.3	0.3	0.3	0.3	0.3
75	0.3	0.3	0.3	0.3	0.3
80	0.3	0.3	0.3	0.3	0.3
85	0.3	0.3	0.3	0.3	0.3
90	0.3	0.3	0.3	0.3	0.3
95	0.3	0.3	0.3	0.3	0.3
100	0.3	0.3	0.3	0.3	0.3
105	0.3	0.3	0.3	0.3	0.3
110	0.3	0.3	0.3	0.3	0.3
115	0.3	0.3	0.3	0.3	0.3
120	0.3	0.3	0.3	0.3	0.3
125	0.3	0.3	0.3	0.3	0.3
130	0.3	0.3	0.3	0.3	0.3
135	0.3	0.3	0.3	0.3	0.3
140	0.3	0.3	0.3	0.3	0.3
145	0.3	0.3	0.3	0.3	0.3
150	0.3	0.3	0.3	0.3	0.3
155	0.3	0.3	0.3	0.3	0.3
160	0.3	0.3	0.3	0.3	0.3
165	0.3	0.3	0.3	0.3	0.3
170	0.3	0.3	0.3	0.3	0.3
175	0.3	0.3	0.3	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 700PLUF12x-LED927

Zonal Lumen Summary and Percentages at 25°C

Zone	Lumens (lm)	% Luminaire (%)
700PLUF12x-LED927		
0-30	5.84	1.15
0-40	17.83	3.51
0-60	73.33	14.44
0-90	235.79	46.43
60-90	162.46	31.99
0-180	507.86	100

Beam Angle

Total Beam Angle (°)

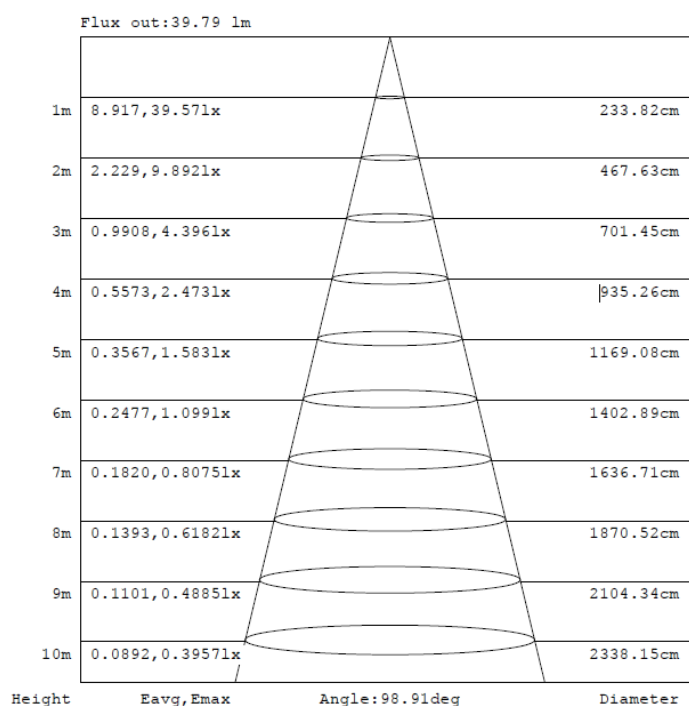
228.0

Illumination Plots

Model No.: 700PLUF12x-LED927

Mount Height: 2.5 m

Illuminance - Cone of Light



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TEST REPORT

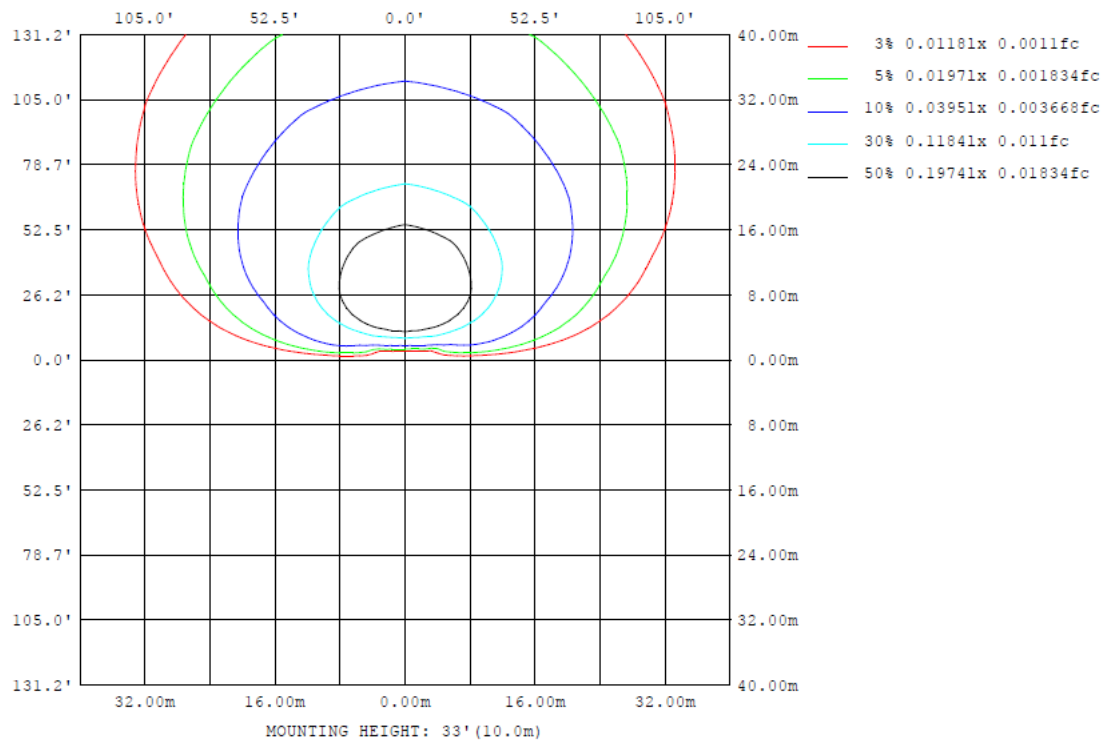
RESULTS OF TESTS (cont'd)

Test Condition: 120V, 60Hz For 700PLUF12x-LED927

Model No.: 700PLUF12x-LED927

Mount Height: 2.5 m

Isoillumination Plot



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TEST REPORT

RESULTS OF TESTS (cont'd)

Test Condition: 120V, 60Hz For 700PLUF12x-LED927

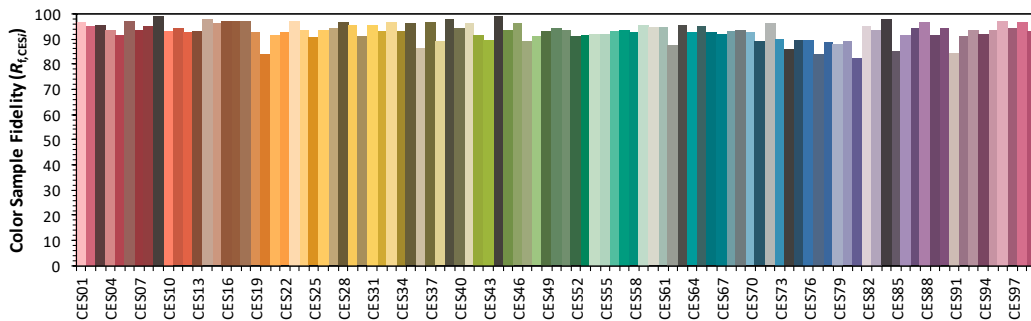
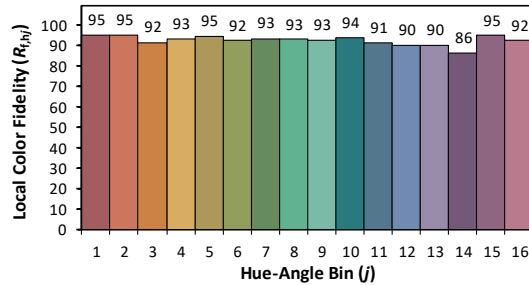
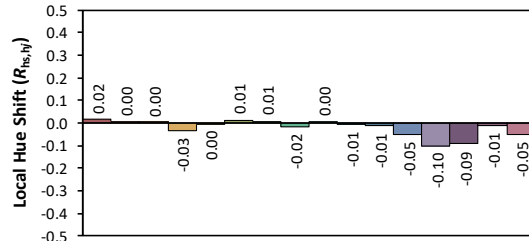
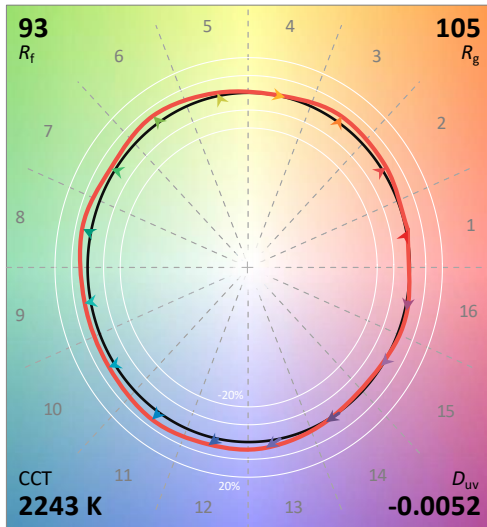
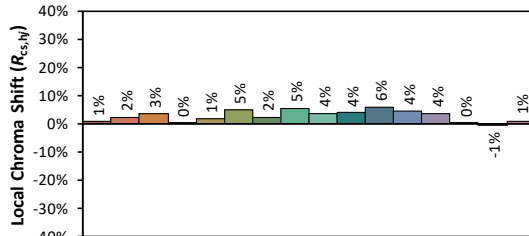
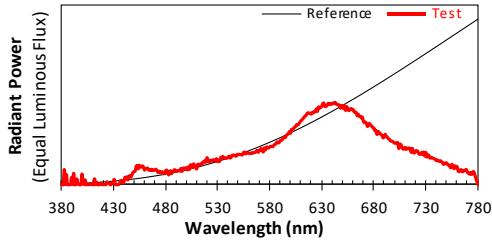
ANSI/IES TM-30-18 Color Rendition Report

Source: User SPD

Manufacturer: Visual Comfort and Company

Date: 2022/8/1

Model: 700PLUF12x-LED927



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

x 0.4905
 y 0.3994
 u' 0.2881
 v' 0.5277

CIE 13.3-1995
(CRI)

R_a 92

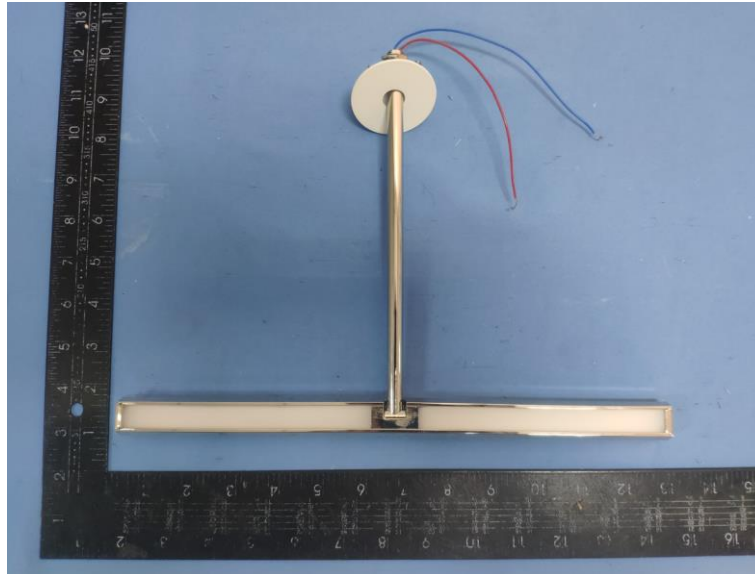
R_g 94

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

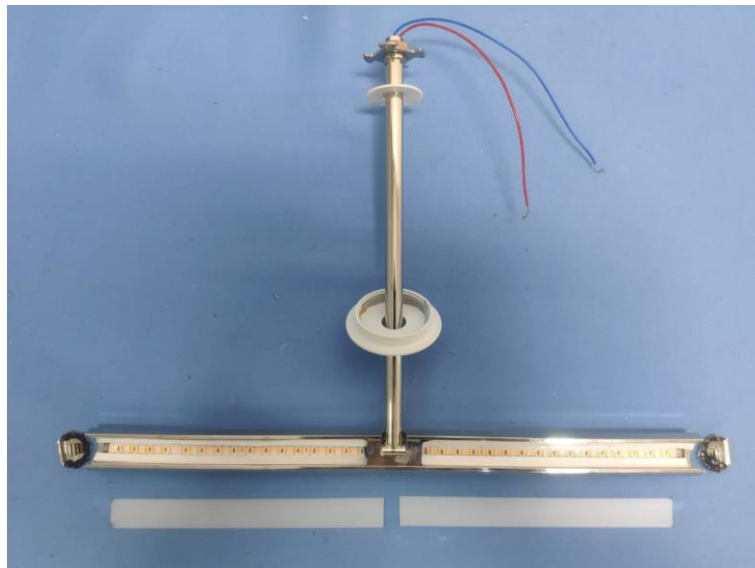
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TEST REPORT

PRODUCT PICTURE (not to scale)



External view of 700PLUF12x-LED927



External view of 700PLUF12x-LED927

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TEST REPORT

PRODUCT PICTURE (not to scale)



View of LED Driver DS20W24VMB2UD-0001



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 *****