

Visual Comfort and Company

TEST REPORT

SCOPE OF WORK

LM-79 testing report

REPORT NUMBER

220706027GZU-005

ISSUE DATE

14 July 2022

REVISION DATE

None

NUMBER OF PAGES

13

DOCUMENT CONTROL NUMBER

Report format for LM-79:2008_F

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Report No.: 220706027GZU-005

TEST REPORT

TEST OF ONE LED LUMINAIRE

MODEL NO. 700PLUF30x-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 700PLUF30x-LED927. The sample was received, in undamaged condition. The sample designation was S220706027-009.

DATES OF TESTS: 13 July 2022 to 14 July 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:	700PLUF30x-LED927 (Remark: "X" denote other appearance colors for the characters that change)
Description:	LED Luminaries
Brand Name:	--

Test Condition: 120V, 60Hz For 700PLUF30x-LED927

Criteria	Result
Total Lumen Output	1400.22 lm
Total Power	20.77 W
Luminaire Efficacy	67.41 lm/W
S/MH(C0/180)	1.81
S/MH(C90/270)	26.98
Correlated Color Temperature (CCT)	1823 K
Color Rendering Index (CRI)	84
R9	94
Chromaticity Coordinate (x)	0.5224
Chromaticity Coordinate (y)	0.3790
Chromaticity Coordinate (u')	0.3213
Chromaticity Coordinate (v')	0.5245

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 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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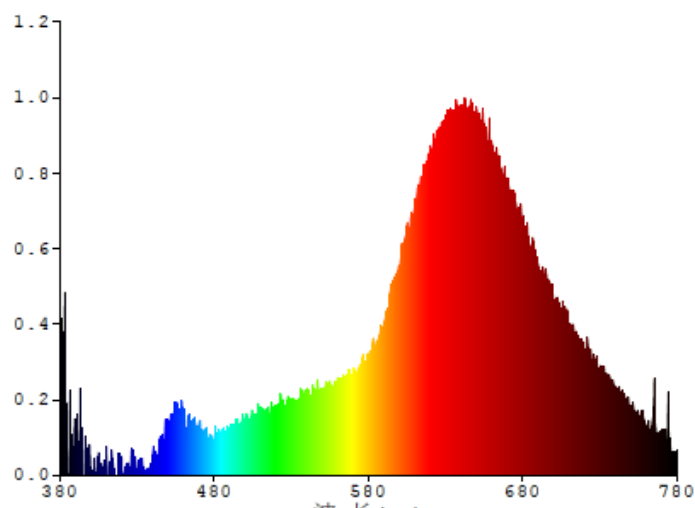
TEST REPORT

RESULTS OF TESTS

Test Condition: 120V, 60Hz For 700PLUF30x-LED927

Spectral Distribution over Visible Wavelengths

nm	mW/nm	nm	mW/nm	nm	mW/nm	nm	mW/nm	nm	mW/nm
380	0.0035	480	0.0010	580	0.0032	680	0.0071	780	0.0007
385	0.0000	485	0.0013	585	0.0037	685	0.0059		
390	0.0010	490	0.0009	590	0.0042	690	0.0060		
395	0.0000	495	0.0015	595	0.0052	695	0.0056		
400	0.0000	500	0.0014	600	0.0057	700	0.0049		
405	0.0006	505	0.0016	605	0.0071	705	0.0046		
410	0.0008	510	0.0016	610	0.0077	710	0.0042		
415	0.0002	515	0.0019	615	0.0084	715	0.0040		
420	0.0005	520	0.0020	620	0.0093	720	0.0034		
425	0.0003	525	0.0019	625	0.0096	725	0.0032		
430	0.0000	530	0.0019	630	0.0102	730	0.0030		
435	0.0000	535	0.0021	635	0.0103	735	0.0026		
440	0.0005	540	0.0024	640	0.0102	740	0.0024		
445	0.0009	545	0.0025	645	0.0104	745	0.0021		
450	0.0014	550	0.0023	650	0.0104	750	0.0019		
455	0.0018	555	0.0026	655	0.0099	755	0.0017		
460	0.0017	560	0.0028	660	0.0094	760	0.0012		
465	0.0015	565	0.0028	665	0.0089	765	0.0018		
470	0.0013	570	0.0028	670	0.0084	770	0.0011		
475	0.0011	575	0.0030	675	0.0074	775	0.0008		



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TEST REPORT

RESULTS OF TESTS (cont'd)

Test Condition: 120V, 60Hz For 700PLUF30x-LED927

Total operation burning time: 60 minutes

Stabilization time: 45 minutes

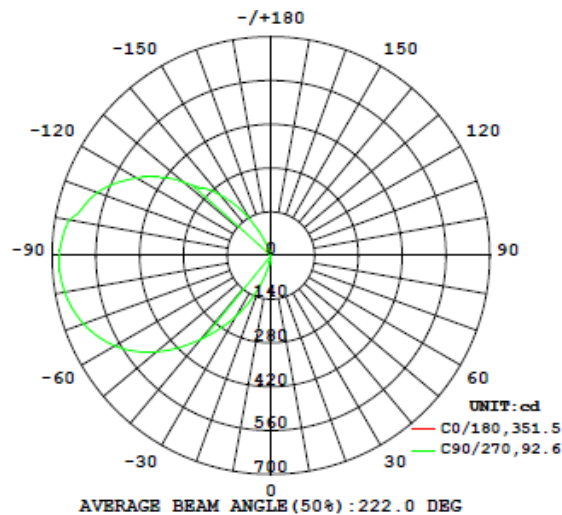
Photometric Measurements at 25°C – Integrating Sphere Method

Intertek Sample No.	Base Orientation	Correlated Color Temperature (K)	CRI	R9	CIE 31'	CIE 31'	CIE 76'	CIE 76'
					Chromaticit	Chromaticit	Chromaticit	Chromaticit
					y	y	y	y
					Coordinate	Coordinate	Coordinate	Coordinate
					(x)	(y)	(u')	(v')
700PLUF30x-LED927								
S2207060 27-009	--	1823	84	94	0.5224	0.3790	0.3213	0.5245

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)
700PLUF30x-LED927							
S2207060 27-009	--	120.0	178.5	20.77	0.970	1400.22	67.41

Intensity (Candlepower) Summary at 25°C – Candelas



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TEST REPORT

RESULTS OF TESTS (cont'd)

Test Condition: 120V, 60Hz For 700PLUF30x-LED927

Intensity (Candlepower) Summary at 25°C - Candelas

V \ H(°)	0	22.5	45	67.5	90
0	0.4	0.4	0.4	0.4	0.4
5	0.4	0.4	0.4	0.4	0.4
10	0.4	0.4	0.4	0.4	0.4
15	0.4	0.4	0.4	0.4	0.4
20	0.4	0.4	0.4	0.4	0.4
25	0.4	0.4	0.4	0.4	0.5
30	0.5	0.4	0.4	0.5	0.5
35	0.5	0.4	0.5	0.5	0.5
40	0.4	0.4	0.5	0.5	0.6
45	0.4	0.4	0.5	0.6	0.6
50	0.4	0.4	0.5	0.6	0.6
55	0.4	0.4	0.5	0.7	0.7
60	0.4	0.4	0.5	0.8	0.9
65	0.4	0.4	0.6	0.8	1.0
70	0.4	0.4	0.6	0.9	1.0
75	0.4	0.4	0.6	1.0	1.1
80	0.4	0.4	0.6	1.0	1.1
85	0.4	0.4	0.6	1.0	1.1
90	0.4	0.4	0.6	0.9	1.2
95	0.4	0.4	0.6	0.9	1.1
100	0.4	0.4	0.6	0.9	1.1
105	0.4	0.4	0.6	0.9	1.0
110	0.4	0.4	0.5	0.8	1.0
115	0.4	0.4	0.5	0.8	0.9
120	0.4	0.4	0.5	0.7	0.9
125	0.5	0.4	0.5	0.7	0.8
130	0.4	0.4	0.4	0.7	0.8
135	0.4	0.4	0.4	0.7	0.9
140	0.3	0.5	0.5	0.8	0.8
145	0.4	0.4	0.6	0.8	1.0
150	0.4	0.3	0.4	0.6	0.5
155	0.3	0.3	0.3	0.5	0.5
160	0.3	0.3	0.3	0.4	0.4
165	0.3	0.3	0.2	0.4	0.3
170	0.3	0.2	0.2	0.2	0.3
175	0.2	0.1	0.1	0.1	0.1
180	0.1	0.1	0.1	0.2	0.2

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TEST REPORT

RESULTS OF TESTS (cont'd)

Test Condition: 120V, 60Hz For 700PLUF30x-LED927

Zonal Lumen Summary and Percentages at 25°C

Zone	Lumens (lm)	% Luminaire (%)
700PLUF30x-LED927		
0-30	19.07	1.36
0-40	59.43	4.24
0-60	249.45	17.82
0-90	761.30	54.37
60-90	511.85	36.55
0-180	1400.22	100

Beam Angle

Total Beam Angle (°)

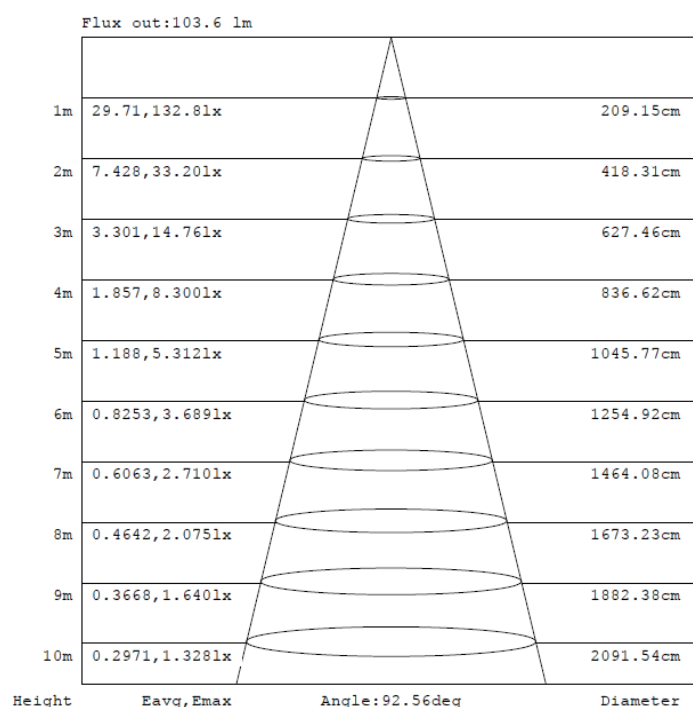
222.0

Illumination Plots

Model No.: 700PLUF30x-LED927

Mount Height: 2.5 m

Illuminance - Cone of Light



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TEST REPORT

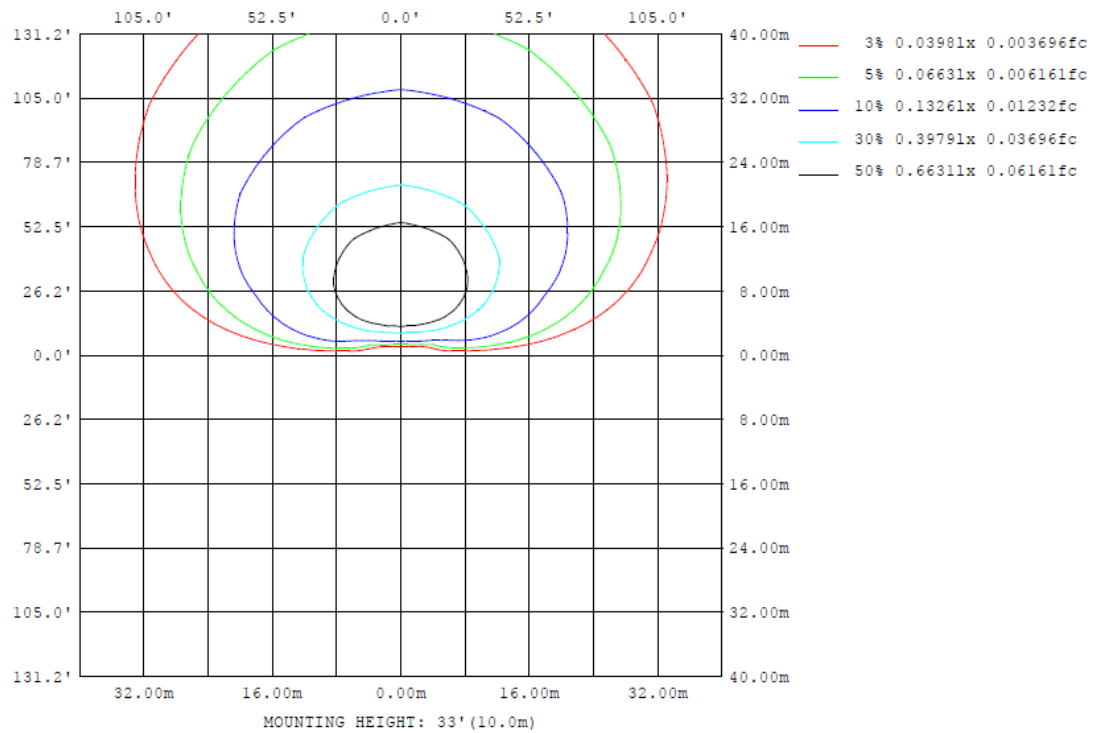
RESULTS OF TESTS (cont'd)

Test Condition: 120V, 60Hz For 700PLUF30x-LED927

Model No.: 700PLUF30x-LED927

Mount Height: 2.5 m

Isoillumination Plot



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TEST REPORT

RESULTS OF TESTS (cont'd)

Test Condition: 120V, 60Hz For 700PLUF30x-LED927

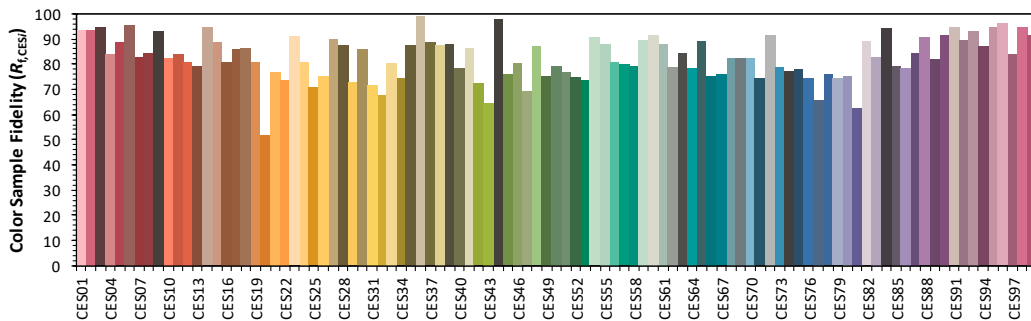
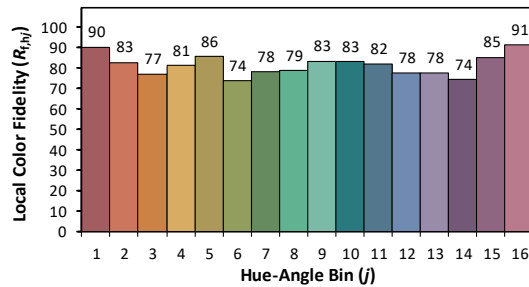
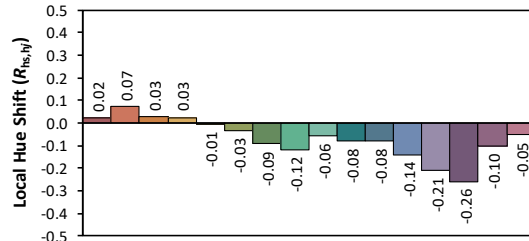
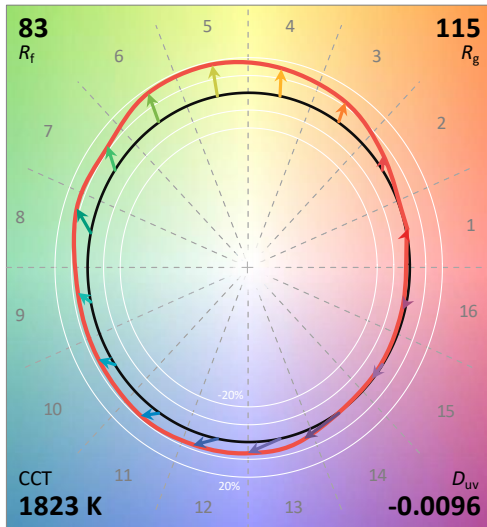
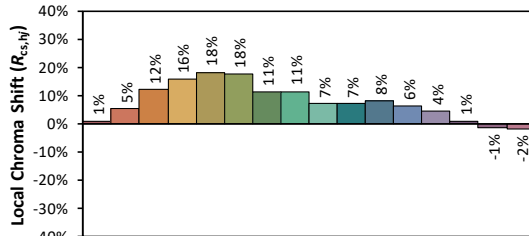
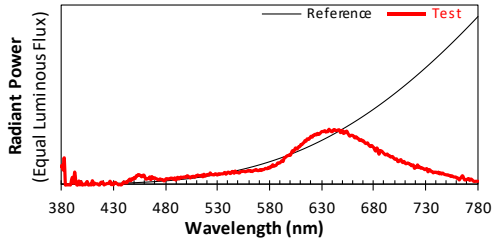
ANSI/IES TM-30-18 Color Rendition Report

Source: User SPD

Manufacturer: Visual Comfort and Company

Date: 2022/7/14

Model: 700PLUF30x-LED927



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

x 0.5224
 y 0.3790
 u' 0.3213
 v' 0.5245

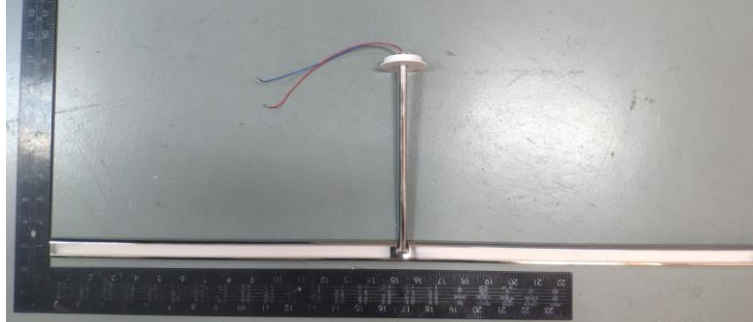
CIE 13.3-1995
 (CRI)
 R_a 84
 R_g 94

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

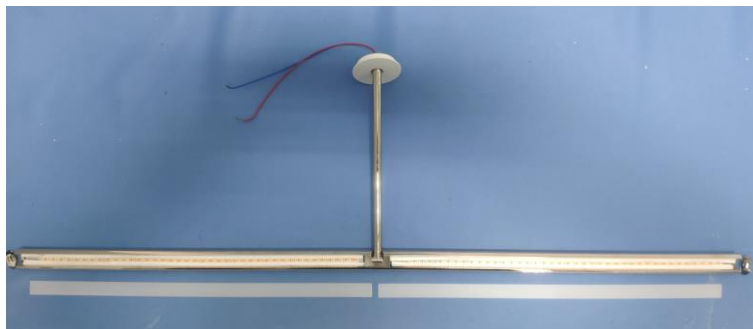
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TEST REPORT

PRODUCT PICTURE (not to scale)



External view of 700PLUF30x-LED927

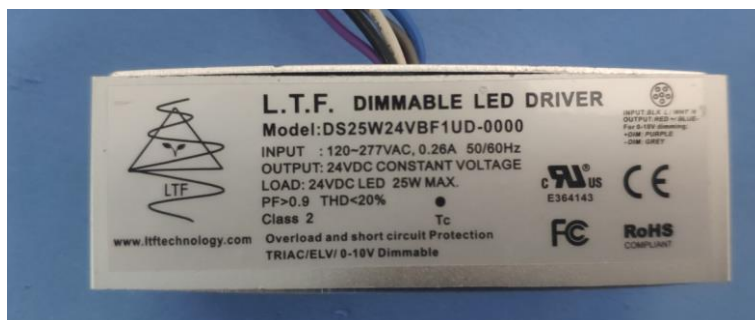


External view of 700PLUF30x-LED927

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TEST REPORT

PRODUCT PICTURE (not to scale)



View of LED Driver DS25W24VBF1UD-0000



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 *****