

Visual Comfort and Company

TEST REPORT

SCOPE OF WORK

LM-79 testing report

REPORT NUMBER

220706027GZU-002

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REVISION DATE

None

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Report No.: 220706027GZU-002

TEST REPORT

TEST OF ONE LED LUMINAIRE

MODEL NO. 700PLUF18x-LED927

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 700PLUF18x-LED927. The sample was received, in undamaged condition. The sample designation was S220706027-004.

DATES OF TESTS: 11 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:	700PLUF18x-LED927 (Remark: "X" denote other appearance colors for the characters that change)
Description:	LED Luminaries
Brand Name:	--

Test Condition: 120V, 60Hz For 700PLUF18x-LED927

Criteria	Result
Total Lumen Output	834.42 lm
Total Power	13.50 W
Luminaire Efficacy	61.80 lm/W
S/MH(C0/180)	1.41
S/MH(C90/270)	7.78
Correlated Color Temperature (CCT)	2393 K
Color Rendering Index (CRI)	97
R9	95
Chromaticity Coordinate (x)	0.4837
Chromaticity Coordinate (y)	0.4098
Chromaticity Coordinate (u')	0.2784
Chromaticity Coordinate (v')	0.5307

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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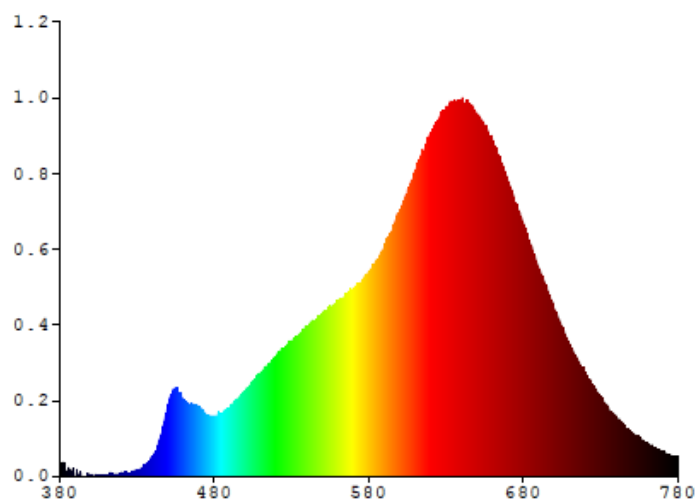
TEST REPORT

RESULTS OF TESTS

Test Condition: 120V, 60Hz For 700PLUF18x-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	0.0151	580	0.0527	680	0.0651	780	0.0052
385	0.0000	485	0.0160	585	0.0559	685	0.0597		
390	0.0000	490	0.0178	590	0.0594	690	0.0540		
395	0.0000	495	0.0194	595	0.0634	695	0.0496		
400	0.0000	500	0.0219	600	0.0687	700	0.0432		
405	0.0000	505	0.0246	605	0.0732	705	0.0385		
410	0.0002	510	0.0266	610	0.0790	710	0.0339		
415	0.0000	515	0.0290	615	0.0845	715	0.0301		
420	0.0009	520	0.0311	620	0.0890	720	0.0267		
425	0.0000	525	0.0330	625	0.0921	725	0.0231		
430	0.0015	530	0.0347	630	0.0960	730	0.0206		
435	0.0028	535	0.0367	635	0.0973	735	0.0176		
440	0.0050	540	0.0384	640	0.0973	740	0.0153		
445	0.0097	545	0.0399	645	0.0960	745	0.0131		
450	0.0182	550	0.0417	650	0.0938	750	0.0114		
455	0.0229	555	0.0441	655	0.0906	755	0.0103		
460	0.0199	560	0.0457	660	0.0871	760	0.0088		
465	0.0187	565	0.0473	665	0.0821	765	0.0070		
470	0.0179	570	0.0488	670	0.0765	770	0.0059		
475	0.0157	575	0.0501	675	0.0701	775	0.0053		



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TEST REPORT

RESULTS OF TESTS (cont'd)

Test Condition: 120V, 60Hz For 700PLUF18x-LED927

Total operation burning time: 60 minutes

Stabilization time: 45 minutes

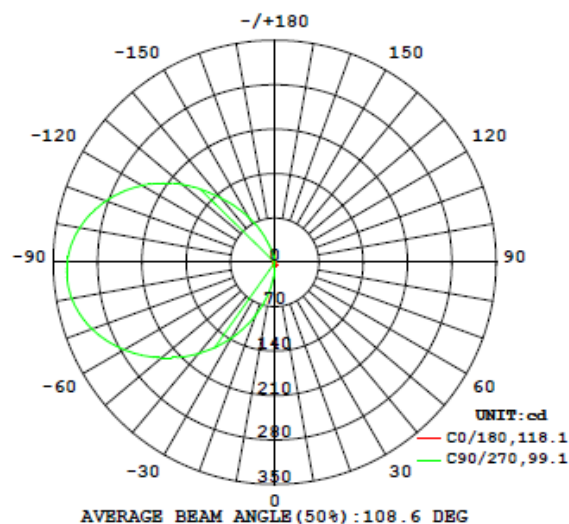
Photometric Measurements at 25°C – Integrating Sphere Method

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')
700PLUF18x-LED927								
S2207060 27-004	--	2393	97	95	0.4837	0.4098	0.2784	0.5307

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)
700PLUF18x-LED927							
S2207060 27-004	--	120.0	117.0	13.50	0.961	834.42	61.80

Intensity (Candlepower) Summary at 25°C – Candelas



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TEST REPORT

RESULTS OF TESTS (cont'd)

Test Condition: 120V, 60Hz For 700PLUF18x-LED927

Intensity (Candlepower) Summary at 25°C - Candelas

V \ H(°)	0	22.5	45	67.5	90
0	7.6	7.6	7.6	7.6	7.6
5	7.5	3.5	1.3	1.2	1.2
10	7.3	1.4	1.2	1.1	1.0
15	7.2	1.4	1.1	0.9	0.9
20	7.0	1.4	1.1	0.8	0.7
25	6.7	1.4	1.0	0.7	0.6
30	6.4	1.4	0.9	0.6	0.5
35	6.0	1.3	0.8	0.6	0.4
40	5.5	1.2	0.7	0.5	0.4
45	5.0	1.1	0.6	0.4	0.3
50	4.4	1.0	0.5	0.3	0.3
55	3.8	0.8	0.4	0.4	0.4
60	3.2	0.7	0.4	0.4	0.4
65	2.6	0.5	0.4	0.5	0.5
70	2.0	0.4	0.5	0.6	0.5
75	1.5	0.3	0.5	0.6	0.6
80	1.3	0.3	0.5	0.6	0.6
85	1.2	0.3	0.5	0.6	0.6
90	0.8	0.4	0.5	0.6	0.6
95	1.0	0.4	0.5	0.6	0.6
100	1.1	0.3	0.5	0.6	0.5
105	0.9	0.3	0.4	0.5	0.5
110	0.8	0.4	0.4	0.5	0.5
115	0.8	0.3	0.4	0.4	0.4
120	0.8	0.4	0.4	0.4	0.4
125	0.7	0.4	0.4	0.4	0.4
130	0.7	0.4	0.4	0.4	0.4
135	0.7	0.5	0.4	0.4	0.3
140	0.7	0.5	0.4	0.3	0.3
145	0.7	0.4	0.4	0.3	0.3
150	0.9	0.4	0.4	0.3	0.3
155	1.0	0.7	0.4	0.3	0.3
160	1.0	0.7	0.5	0.3	0.3
165	0.5	0.4	0.6	0.4	0.4
170	0.5	0.4	0.3	0.5	0.5
175	0.4	0.4	0.3	0.3	0.3
180	0.7	0.7	0.7	0.0	0.1

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TEST REPORT

RESULTS OF TESTS (cont'd)

Test Condition: 120V, 60Hz For 700PLUF18x-LED927

Zonal Lumen Summary and Percentages at 25°C

Zone	Lumens (lm)	% Luminaire (%)
700PLUF18x-LED927		
0-30	23.71	2.84
0-40	54.97	6.59
0-60	172.02	20.62
0-90	458.64	54.96
60-90	286.62	34.34
0-180	834.42	100

Beam Angle

Total Beam Angle (°)

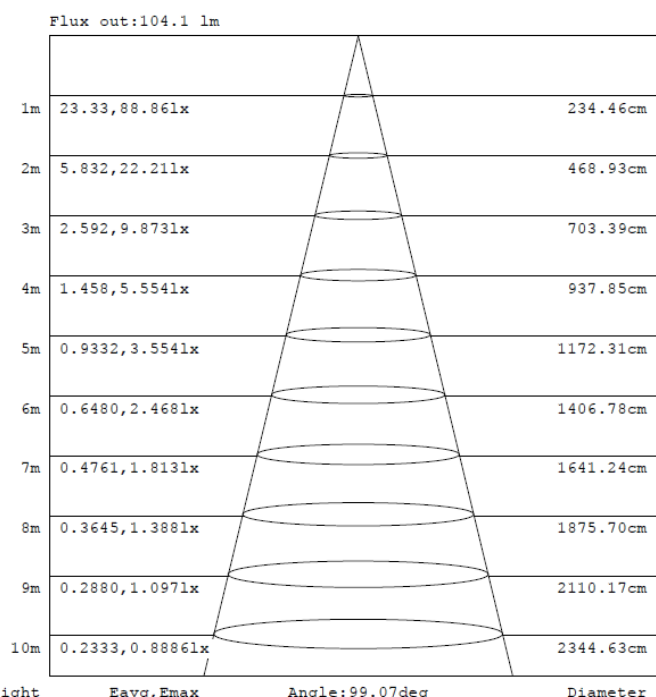
108.6

Illumination Plots

Model No.: 700PLUF18x-LED927

Mount Height: 2.5 m

Illuminance - Cone of Light



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TEST REPORT

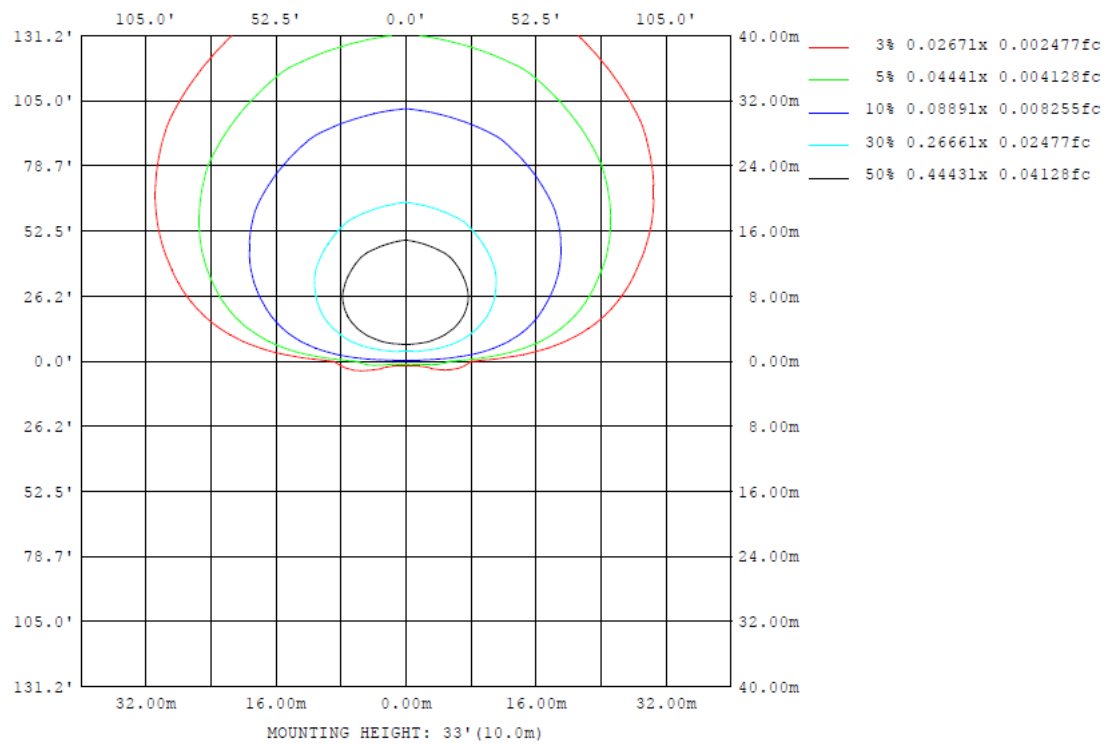
RESULTS OF TESTS (cont'd)

Test Condition: 120V, 60Hz For 700PLUF18x-LED927

Model No.: 700PLUF18x-LED927

Mount Height: 2.5 m

Isoillumination Plot



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TEST REPORT

RESULTS OF TESTS (cont'd)

Test Condition: 120V, 60Hz For 700PLUF18x-LED927

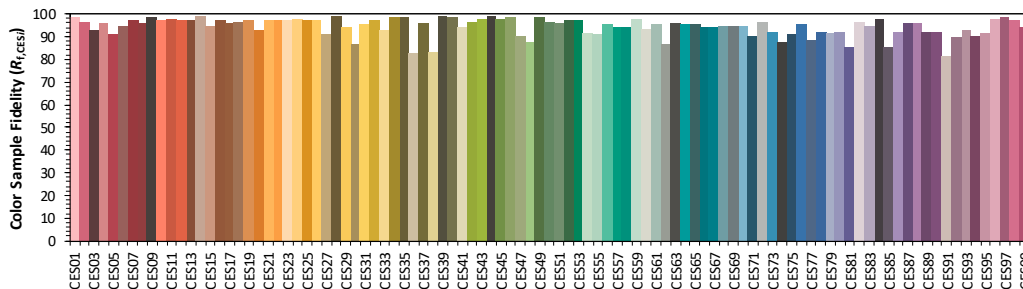
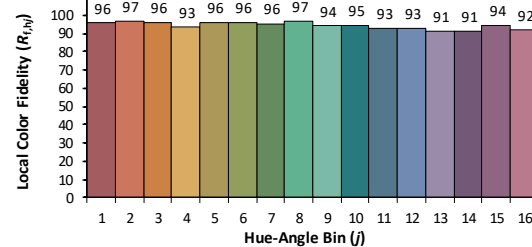
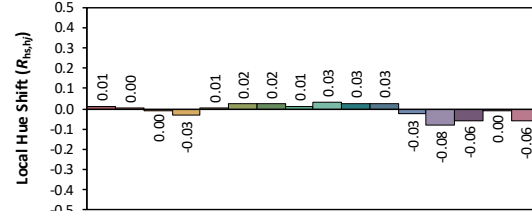
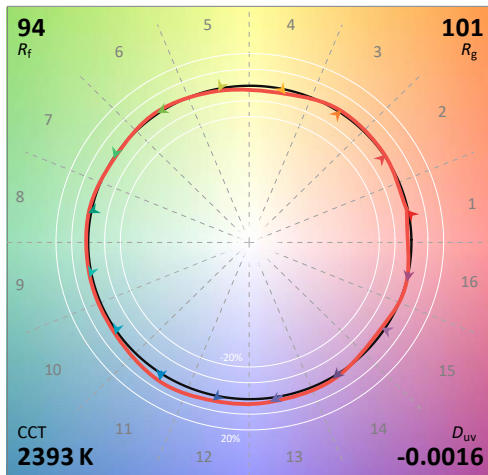
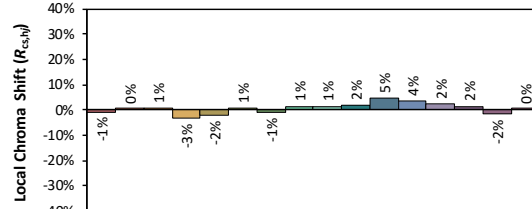
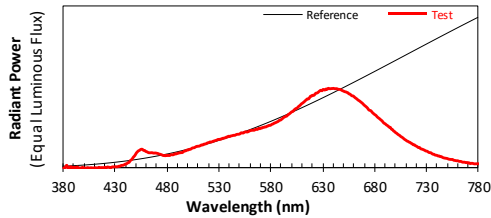
ANSI/IES TM-30-18 Color Rendition Report

Source: User SPD

Manufacturer: Visual Comfort and Company

Date: 2022/7/11

Model: 700PLUF18x-LED927



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

x 0.4837
 y 0.4098
 u' 0.2784
 v' 0.5307

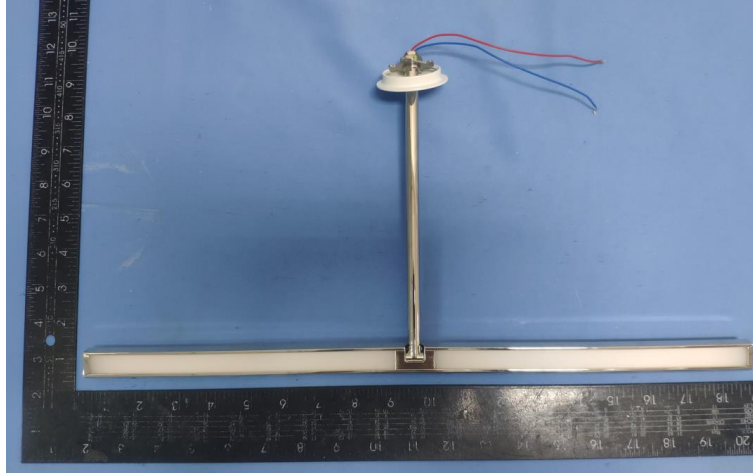
CIE 13.3-1995
(CRI)
 R_a 97
 R_g 95

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

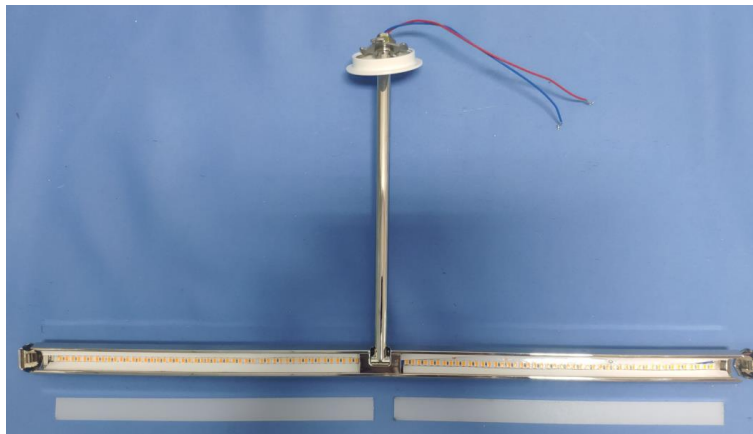
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TEST REPORT

PRODUCT PICTURE (not to scale)



External view of 700PLUF18x-LED927

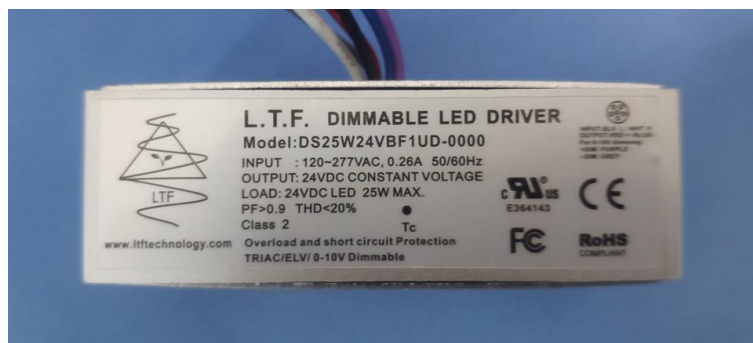


External view of 700PLUF18x-LED927

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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 *****