

# VC BRANDS LLC

## TEST REPORT

**SCOPE OF WORK**

LM-79 testing report

**REPORT NUMBER**

210621260GZU-001

**ISSUE DATE**

9 July 2021

**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. 700FMKLA13\*-LED927

#### RENDERED TO

VC BRANDS LLC

Contact Name: Tess Gallagher

7400 LINDER AVE. SKOKIE, IL USA 60077

Email:  
TGALLAGHER@VISUALCOMFORTCO.CO  
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: QGZ210406068.

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 700FMKLA13\*-LED927. The sample was received, in undamaged condition. The sample designation was S210621260-001.

DATES OF TESTS: 25 June 2021

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:	700FMKLA13*-LED927 (Remark: "*" denote other colors for the characters that change.)
Description:	LED Luminaries
Brand Name:	--

### Test Condition: 120V, 60Hz For 700FMKLA13\*-LED927

Criteria	Result
Total Lumen Output	1292.3 lm
Total Power	25.34 W
Luminaire Efficacy	51.01 lm/W
S/MH(C0/180)	1.83
S/MH(C90/270)	2.16
Correlated Color Temperature (CCT)	2839 K
Color Rendering Index (CRI)	94
R9	70
Chromaticity Coordinate (x)	0.4499
Chromaticity Coordinate (y)	0.4099
Chromaticity Coordinate (u')	0.2564
Chromaticity Coordinate (v')	0.5256

### 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 $\pi$  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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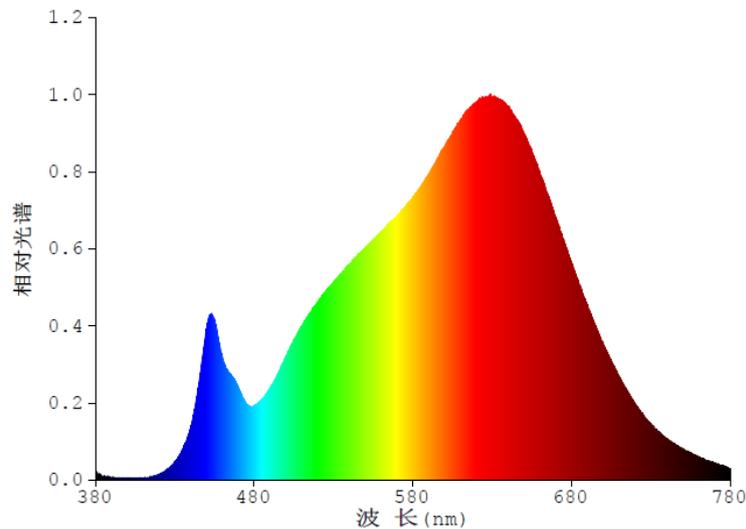
## TEST REPORT

### RESULTS OF TESTS

**Test Condition: 120V, 60Hz For 700FMKLA13\*-LED927**

Spectral Distribution over Visible Wavelengths

nm	mW/nm								
380	0.04	480	0.47	580	1.82	680	1.40	780	0.07
385	0.02	485	0.52	585	1.89	685	1.26		
390	0.01	490	0.59	590	1.96	690	1.12		
395	0.01	495	0.68	595	2.05	695	1.00		
400	0.01	500	0.80	600	2.14	700	0.88		
405	0.01	505	0.90	605	2.23	705	0.77		
410	0.01	510	0.99	610	2.32	710	0.67		
415	0.02	515	1.07	615	2.38	715	0.58		
420	0.04	520	1.14	620	2.43	720	0.49		
425	0.07	525	1.21	625	2.46	725	0.42		
430	0.12	530	1.27	630	2.46	730	0.36		
435	0.20	535	1.33	635	2.45	735	0.31		
440	0.34	540	1.39	640	2.40	740	0.27		
445	0.61	545	1.44	645	2.32	745	0.23		
450	0.98	550	1.49	650	2.23	750	0.20		
455	1.02	555	1.55	655	2.11	755	0.17		
460	0.79	560	1.60	660	1.98	760	0.15		
465	0.68	565	1.65	665	1.84	765	0.13		
470	0.59	570	1.70	670	1.69	770	0.11		
475	0.49	575	1.75	675	1.55	775	0.09		



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## TEST REPORT

### RESULTS OF TESTS (cont'd)

#### Test Condition: 120V, 60Hz For 700FMKLA13\*-LED927

Total operation burning time: 60 minutes

Stabilization time: 45 minutes

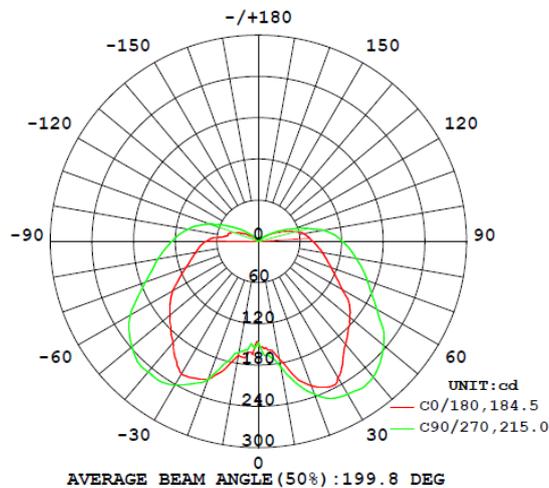
#### Photometric Measurements at 25°C – Integrating Sphere Method

Intertek Sample No.	Base Orientation	Correlated Color Temperature (K)	CRI	R9	CIE 31'	CIE 31'	CIE 76'	CIE 76'
					Chromaticity Coordinate (x)	Chromaticity Coordinate (y)	Chromaticity Coordinate (u')	Chromaticity Coordinate (v')
700FMKLA13*-LED927								
S2106212 60-001	--	2839	94	70	0.4499	0.4099	0.2564	0.5256

#### 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)
700FMKLA13*-LED927							
S2106212 60-001	--	120.1	215.7	25.34	0.978	1292.3	51.01

#### Intensity (Candlepower) Summary at 25°C - Candelas



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# TEST REPORT

## RESULTS OF TESTS (cont'd)

**Test Condition: 120V, 60Hz For 700FMKLA13\*-LED927**

Intensity (Candlepower) Summary at 25°C - Candelas

V \ H(°)	0	22.5	45	67.5	90
0	148.4	148.2	148.0	147.9	147.7
5	158.8	163.9	163.7	166.4	166.0
10	173.6	178.9	184.4	186.5	185.4
15	204.0	204.7	208.0	205.9	214.2
20	223.3	220.4	219.3	223.0	236.2
25	233.5	232.8	229.0	223.5	251.6
30	229.1	231.7	231.9	206.7	256.7
35	212.2	231.4	226.8	200.3	260.6
40	195.2	231.5	219.5	191.5	257.5
45	182.7	228.3	210.2	182.2	248.3
50	172.3	222.2	200.3	170.4	235.7
55	159.7	211.5	185.2	155.1	218.9
60	139.2	188.2	160.4	136.7	197.1
65	123.9	173.9	145.0	123.2	180.2
70	111.5	161.6	132.9	112.4	167.1
75	102.0	150.5	122.3	102.8	155.3
80	93.7	139.1	111.4	94.4	143.2
85	85.6	129.1	102.1	86.8	132.6
90	78.7	118.1	92.5	79.4	121.4
95	72.5	107.6	83.7	72.8	110.8
100	66.5	93.9	72.7	65.2	94.3
105	56.9	75.2	59.8	53.3	73.8
110	44.2	56.4	44.5	40.2	55.0
115	33.0	40.4	32.3	29.8	39.4
120	24.0	27.9	22.6	21.3	26.9
125	16.9	16.8	14.8	14.4	15.9
130	11.1	10.6	9.1	9.2	10.0
135	6.3	5.7	5.2	5.1	5.4
140	3.0	2.2	2.4	2.2	2.1
145	0.6	0.6	0.3	0.3	0.6
150	0.2	0.2	0.2	0.2	0.2
155	0.2	0.2	0.2	0.2	0.2
160	0.2	0.2	0.2	0.2	0.2
165	0.2	0.2	0.2	0.2	0.2
170	0.2	0.2	0.2	0.2	0.2
175	0.2	0.2	0.2	0.2	0.2
180	0.2	0.2	0.2	0.2	0.2

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## TEST REPORT RESULTS OF TESTS (cont'd)

Test Condition: 120V, 60Hz For 700FMKLA13\*-LED927

### Zonal Lumen Summary and Percentages at 25°C

Zone	Lumens (lm)	% Luminaire (%)
700FMKLA13*-LED927		
0-30	176.2	3.63
0-40	317.1	24.54
0-60	645.0	49.91
0-90	1051.5	81.37
60-90	405.5	31.46
0-180	1292.3	100

### Beam Angle

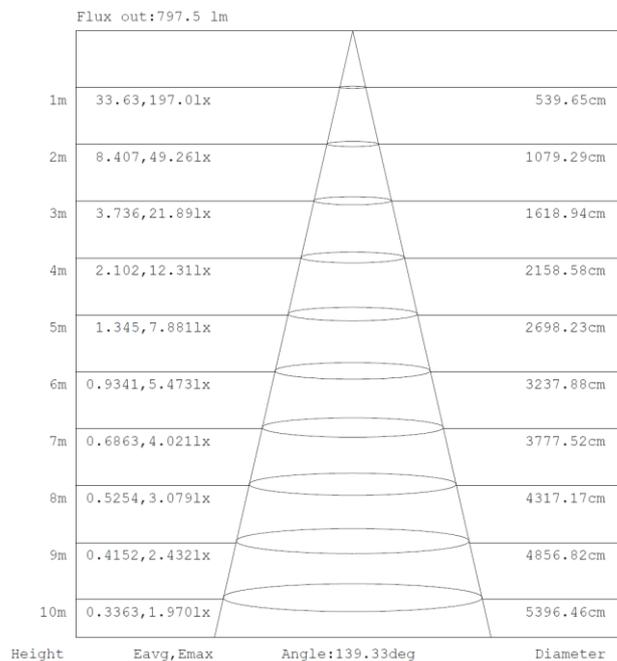
**Total Beam Angle(°)**  
199.8

### Illumination Plots

Model No.: 700FMKLA13\*-LED927

Mount Height: 2.5 m

#### Illuminance - Cone of Light

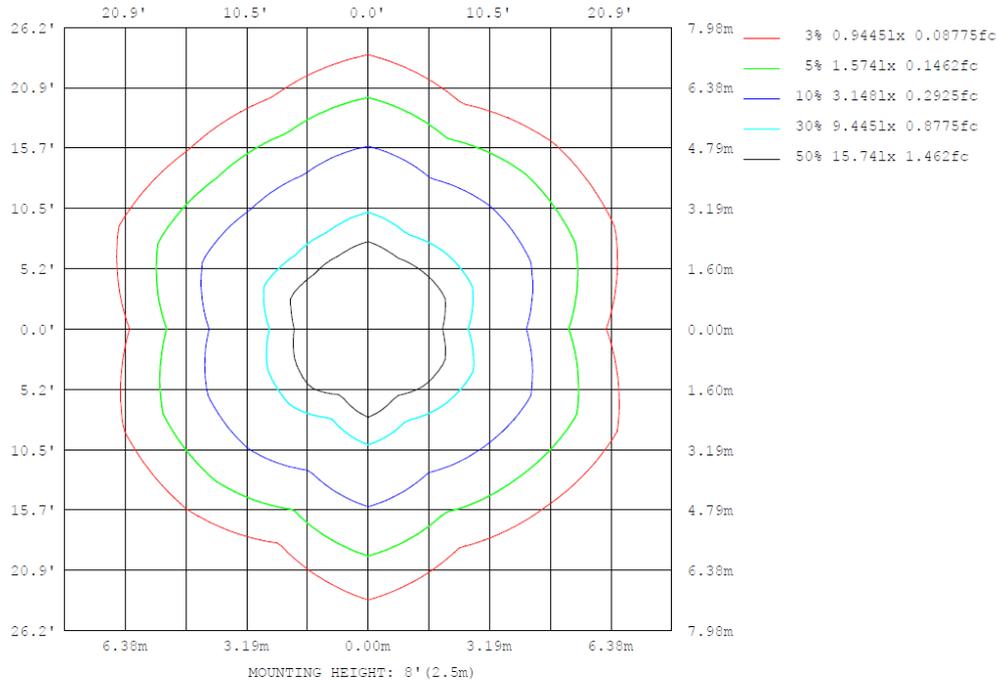


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**TEST REPORT**  
**RESULTS OF TESTS (cont'd)**

**Test Condition: 120V, 60Hz For 700FMKLA13\*-LED927**

Model No.: 700FMKLA13\*-LED927  
Mount Height: 2.5 m  
Isoillumination Plot



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## TEST REPORT

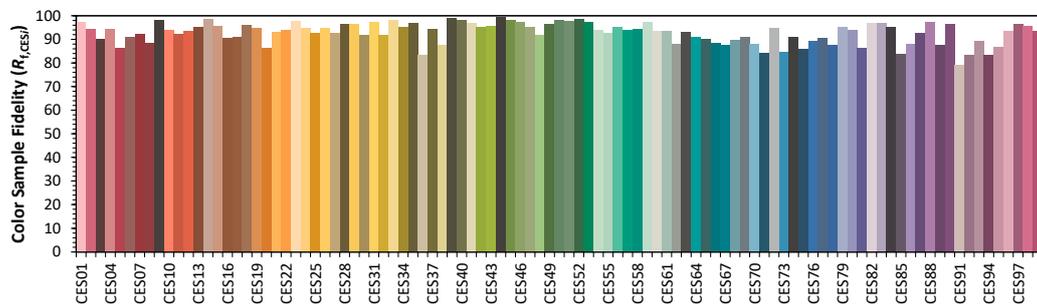
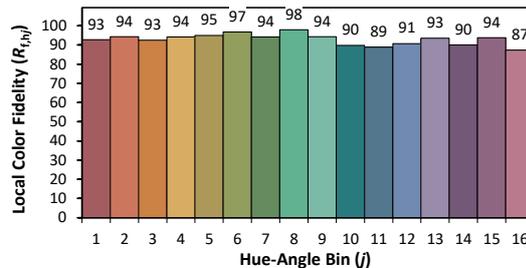
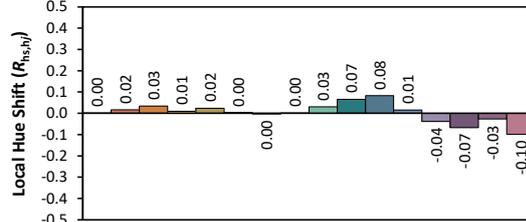
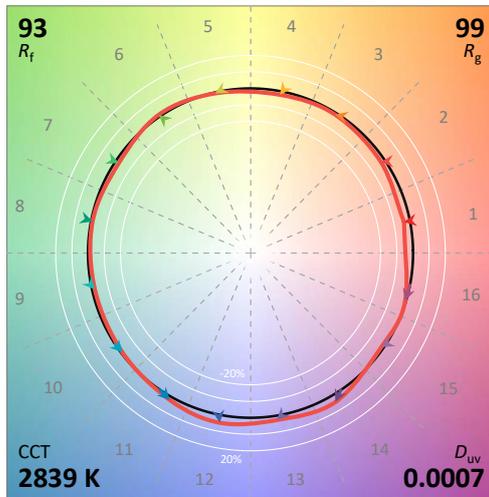
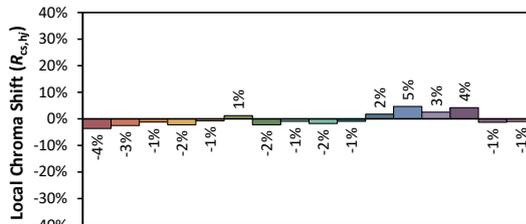
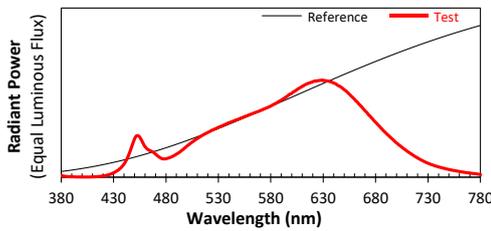
### RESULTS OF TESTS (cont'd)

Test Condition: 120V, 60Hz For 700FMKLA13\*-LED927

### ANSI/IES TM-30-18 Color Rendition Report

Source: User SPD  
Date: 2021/6/25

Manufacturer: VC BRANDS LLC  
Model: 700FMKLA13\*-LED927



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

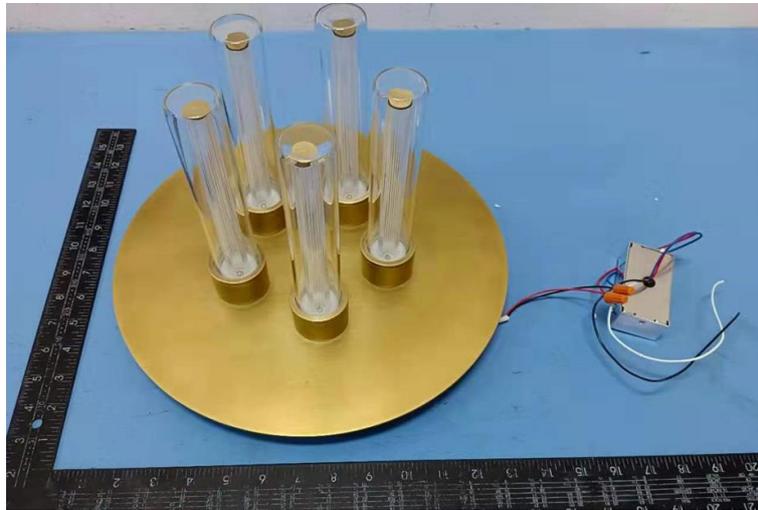
$x$  0.4499  
 $y$  0.4099  
 $u'$  0.2564  
 $v'$  0.5256

CIE 13.3-1995 (CRI)	
$R_a$	94
$R_g$	70

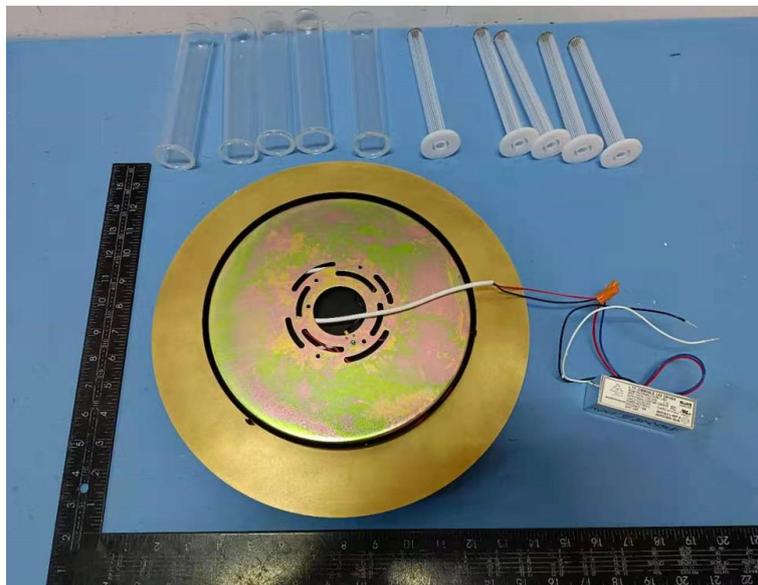
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**TEST REPORT**

**PRODUCT PICTURE (not to scale)**



**External view of 700FMKLA13\*-LED927**

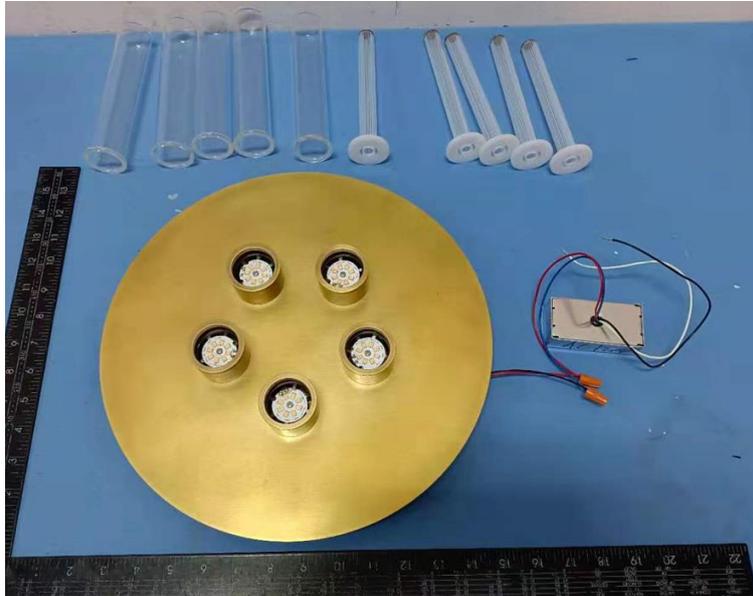


**External view of 700FMKLA13\*-LED927**

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## TEST REPORT

### PRODUCT PICTURE (not to scale)



**Internal view of 700FMKLA13\*-LED927**



**View of LED Driver DA25W600C2742BF1-3001**

In Charge Of Tests:

*Duffe Zhong*

Duffe Zhong  
Engineer

Report Reviewed By

*Shelley Ying*

Shelley Ying  
Reviewer

Attachment: None

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