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VC BRANDS LLC

TEST REPORT

SCOPE OF WORK
LM-79 testing report

REPORT NUMBER
210514048GZU-001

ISSUE DATE
20 May 2021

REVISION DATE
None

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13

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Report format for LM-79:2008_F

Intertek Legal Entity: Intertek Testing Services Shenzhen Ltd.
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Report No.: 210514048GZU-001

TEST REPORT

TEST OF ONE LED LUMINAIRE

MODEL NO. 700FMKLA22*-LED927

RENDERED TO

VC BRANDS LLC

7400 LINDER AVE. SKOKIE, IL USA 60077

Contact Name: Tess Gallagher

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 700FMKLA22*-LED927. The samples were received by Intertek on May 14, 2021, in undamaged condition, and one sample was tested as received. The sample designation was S210514048-001.
DATES OF TESTS:	17 May 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:	700FMKLA22*-LED927 (Remark：”*” denote other colors for the characters that change.)
Description:	LED Luminaries
Brand Name:	--

Test Condition: 120V, 60Hz For 700FMKLA22*-LED927

Criteria	Result
Total Lumen Output	2275 lm
Total Power	38.31 W
Luminaire Efficacy	59.39 lm/W
S/MH(C0/180)	2.04
S/MH(C90/270)	2.03
Correlated Color Temperature (CCT)	2777 K
Color Rendering Index (CRI)	93
R9	59
Chromaticity Coordinate (x)	0.4536
Chromaticity Coordinate (y)	0.4090
Chromaticity Coordinate (u’)	0.2591
Chromaticity Coordinate (v’)	0.5258

Remark:

Measurement uncertainty for applicable tests has been established.

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

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 25ºC 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, 4π 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

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

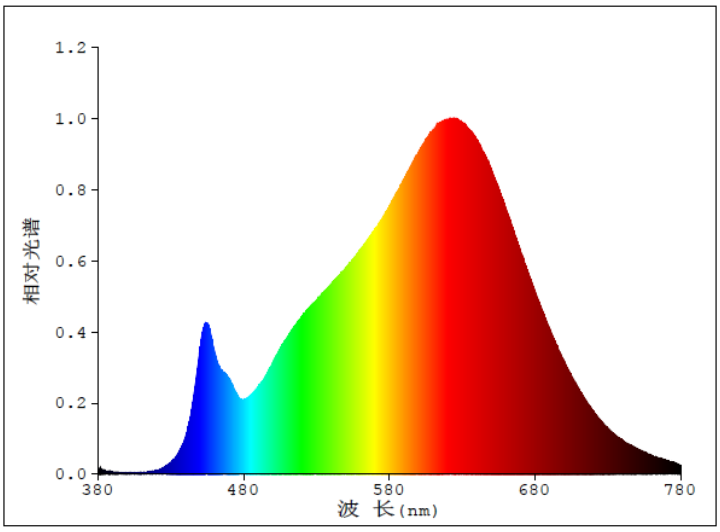
TEST REPORT

RESULTS OF TESTS

Test Condition: 120V, 60Hz For 700FMKLA22*-LED927

Spectral Distribution over Visible Wavelengths

nm	mW/nm	nm	mW/nm	nm	mW/nm	nm	mW/nm	nm	mW/nm
380	0.08	480	0.84	580	3.02	680	2.05	780	0.09
385	0.04	485	0.89	585	3.17	685	1.84		
390	0.02	490	0.99	590	3.32	690	1.64		
395	0.02	495	1.11	595	3.48	695	1.45		
400	0.02	500	1.26	600	3.62	700	1.27		
405	0.02	505	1.41	605	3.77	705	1.11		
410	0.02	510	1.54	610	3.88	710	0.96		
415	0.03	515	1.67	615	3.95	715	0.83		
420	0.04	520	1.78	620	3.99	720	0.71		
425	0.08	525	1.87	625	3.99	725	0.61		
430	0.14	530	1.96	630	3.96	730	0.52		
435	0.24	535	2.05	635	3.88	735	0.44		
440	0.43	540	2.14	640	3.76	740	0.38		
445	0.81	545	2.23	645	3.61	745	0.33		
450	1.43	550	2.32	650	3.43	750	0.29		
455	1.70	555	2.42	655	3.22	755	0.25		
460	1.37	560	2.53	660	3.00	760	0.21		
465	1.17	565	2.64	665	2.76	765	0.18		
470	1.08	570	2.76	670	2.51	770	0.16		
475	0.91	575	2.88	675	2.29	775	0.14		



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TEST REPORT

RESULTS OF TESTS (cont'd)

Test Condition: 120V, 60Hz For 700FMKLA22*-LED927

Total operation burning time: 60 minutes
Stabilization time: 45 minutes

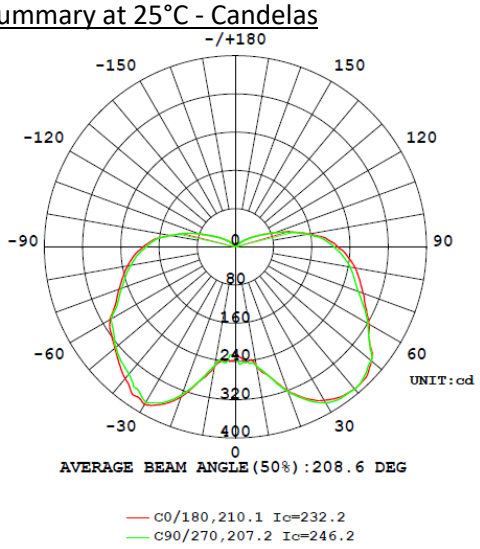
Photometric Measurements at 25°C – Integrating Sphere Method

Intertek Sample No.	Base Orientation	Correlated Color Temperature (K)	CRI	R9	CIE 31' Chromaticity Coordinate (x)	CIE 31' Chromaticity Coordinate (y)	CIE 76' Chromaticity Coordinate (u')	CIE 76' Chromaticity Coordinate (v')
700FMKLA22*-LED927								
S210514048-001	base-up	2777	93	59	0.4536	0.4090	0.2591	0.5258

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)
700FMKLA22*-LED927							
S210514048-001	base-up	120.3	324.2	38.31	0.982	2275	59.39

Intensity (Candlepower) Summary at 25°C - Candelas



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TEST REPORT

RESULTS OF TESTS (cont'd)

Test Condition: 120V, 60Hz For 700FMKLA22*-LED927

Intensity (Candlepower) Summary at 25°C - Candelas

V \ H(°)	0	22.5	45	67.5	90
0	234.1	234.4	234.4	234.0	233.7
5	242.9	247.4	244.6	250.3	242.1
10	253.0	255.4	262.0	254.7	252.3
15	282.2	285.7	287.6	284.7	282.9
20	320.2	322.0	323.5	321.6	322.4
25	349.8	353.4	355.0	353.5	353.4
30	370.7	375.2	378.1	379.1	376.6
35	383.6	362.7	391.3	365.5	385.9
40	388.5	348.1	397.1	347.3	388.7
45	386.2	339.6	391.3	336.4	381.7
50	371.5	325.5	379.1	323.9	370.9
55	342.2	310.2	359.2	311.0	341.7
60	322.6	298.6	344.0	298.0	319.6
65	301.2	283.0	325.5	277.2	296.2
70	284.4	269.8	310.1	261.9	273.8
75	269.1	257.8	296.6	248.7	257.8
80	254.7	244.8	283.8	236.1	243.7
85	235.9	230.4	265.8	222.0	225.8
90	214.3	208.5	241.6	201.7	206.7
95	192.6	188.3	216.8	181.0	185.6
100	157.6	148.9	174.1	144.2	153.9
105	122.1	118.1	131.0	114.7	119.2
110	89.5	85.7	93.6	83.4	87.2
115	61.1	57.2	62.1	56.4	60.2
120	41.7	40.3	42.3	39.8	41.2
125	28.1	27.9	28.9	27.3	27.4
130	17.2	18.7	17.2	18.0	16.5
135	10.5	10.7	10.8	10.0	10.0
140	5.1	5.1	5.2	4.7	4.7
145	1.1	1.2	1.2	1.0	0.9
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 700FMKLA22*-LED927

Zonal Lumen Summary and Percentages at 25°C

Zone	Lumens (lm)	% Luminaire (%)
	700FMKLA22*-LED927	
0-30	271.2	11.92
0-40	507.5	22.31
0-60	1083.5	47.62
0-90	1868.2	82.12
60-90	784.7	34.5
0-180	2275	100

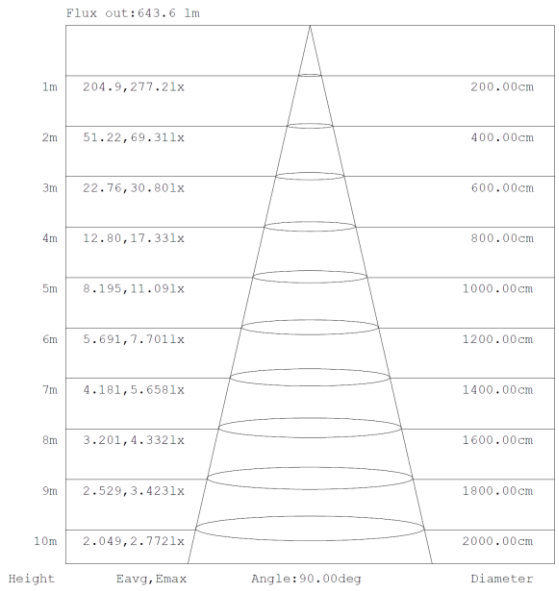
Beam Angle

Total Beam Angle(°)
208.6

Illumination Plots

Model No.: 700FMKLA22*-LED927
Mount Height: 2.5 m

Illuminance - Cone of Light



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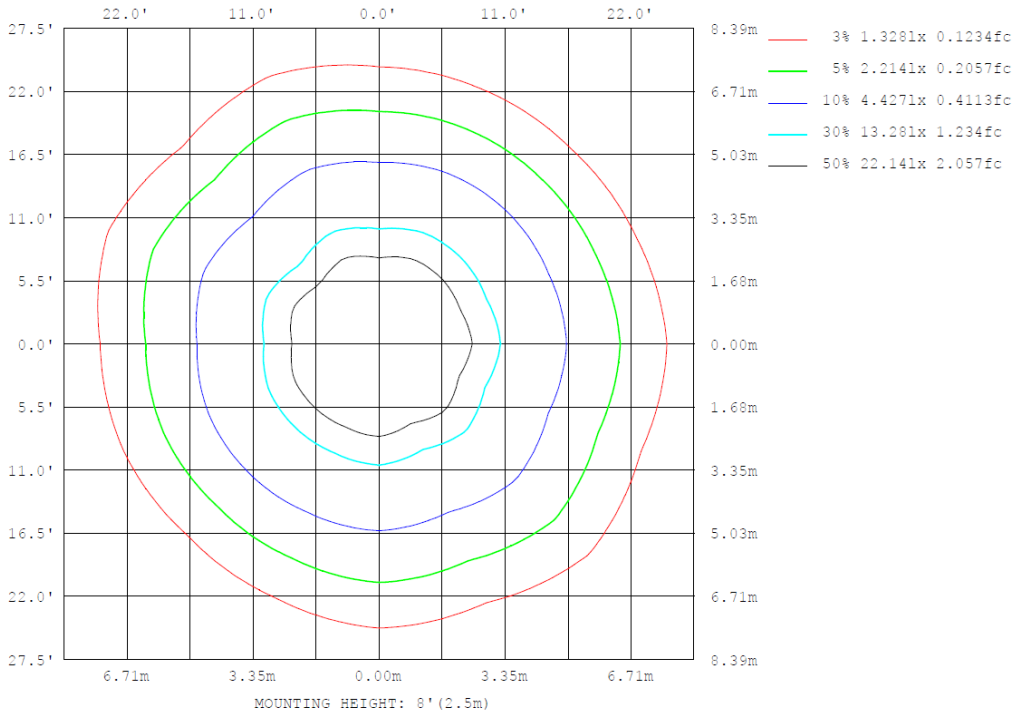
TEST REPORT

RESULTS OF TESTS (cont'd)

Test Condition: 120V, 60Hz For 700FMKLA22*-LED927

Model No.: 700FMKLA22*-LED927
Mount Height: 2.5 m
Isoillumination Plot



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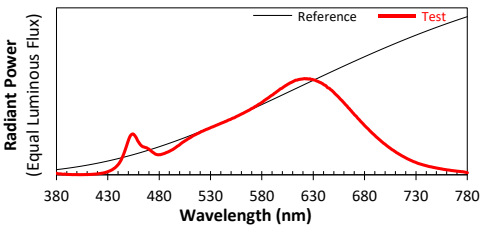
TEST REPORT

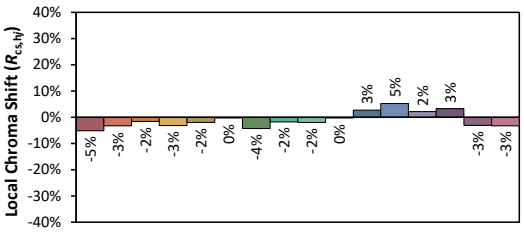
RESULTS OF TESTS (cont'd)

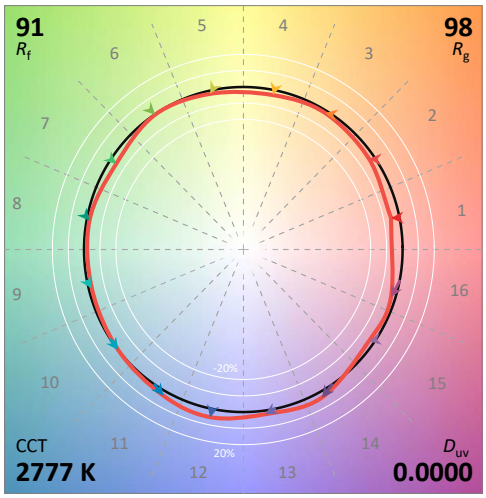
Test Condition: 120V, 60Hz For 700FMKLA22*-LED927

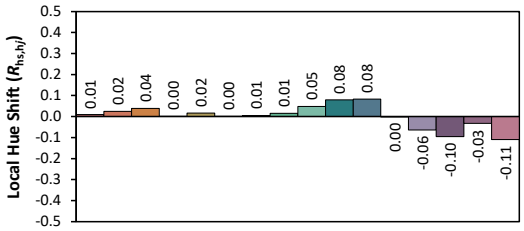
ANSI/IES TM-30-18 Color Rendition Report

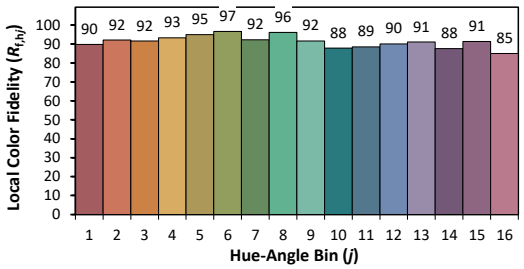
Source:	User SPD	Manufacturer:	VC BRANDS LLC
Date:	2021/5/17	Model:	700FMKLA22*-LED927

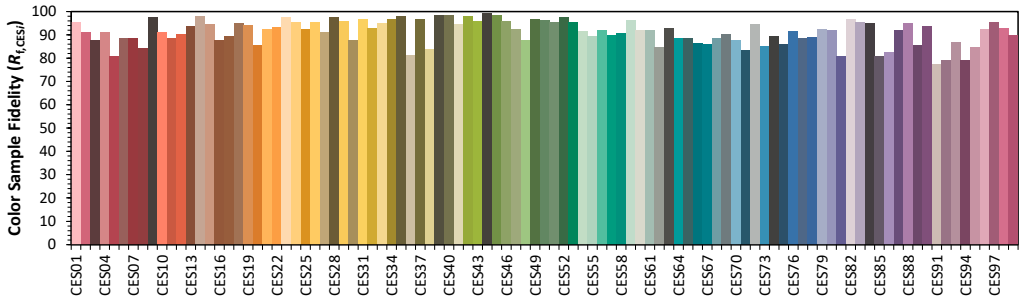












Notes: This is a recommended method for displaying ANSI/IES TM-30-18 information.

x	0.4536
y	0.4090
u'	0.2591
v'	0.5258

CIE 13.3-1995 (CRI)

R_a	93
R_9	59

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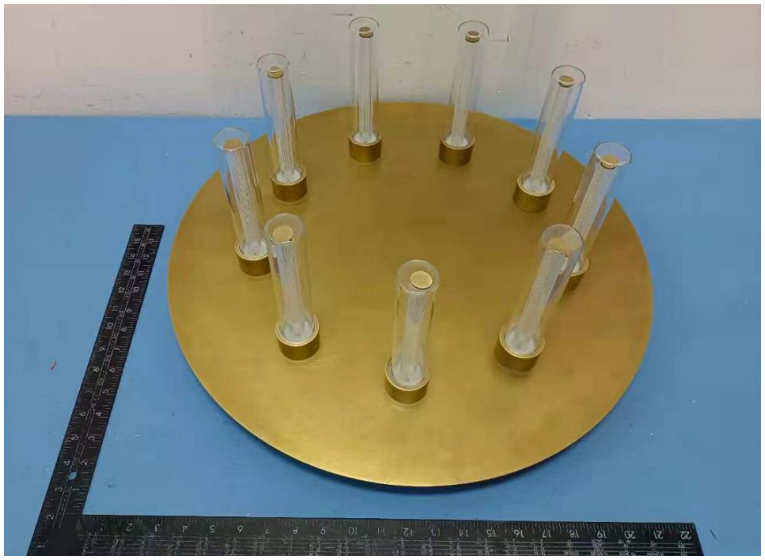
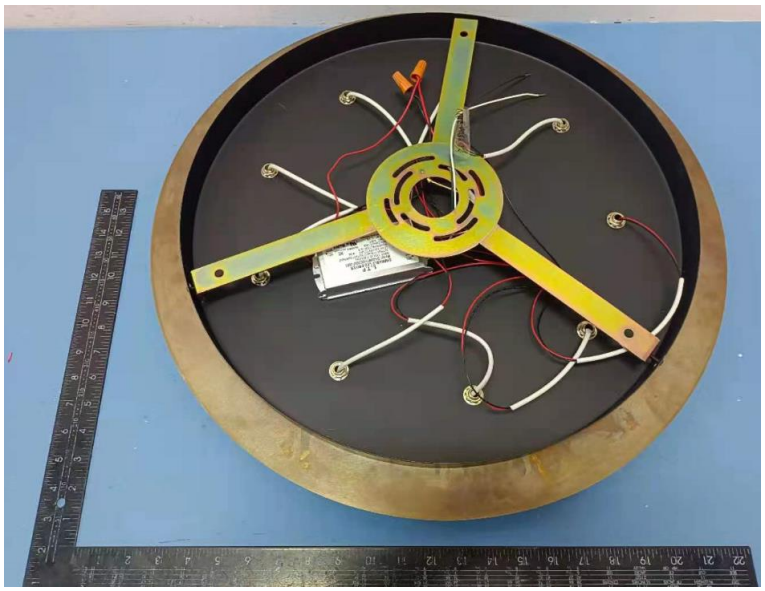
TEST REPORT

PRODUCT PICTURE (not to scale)



External view of 700FMKLA22*-LED927



External view of 700FMKLA22*-LED927

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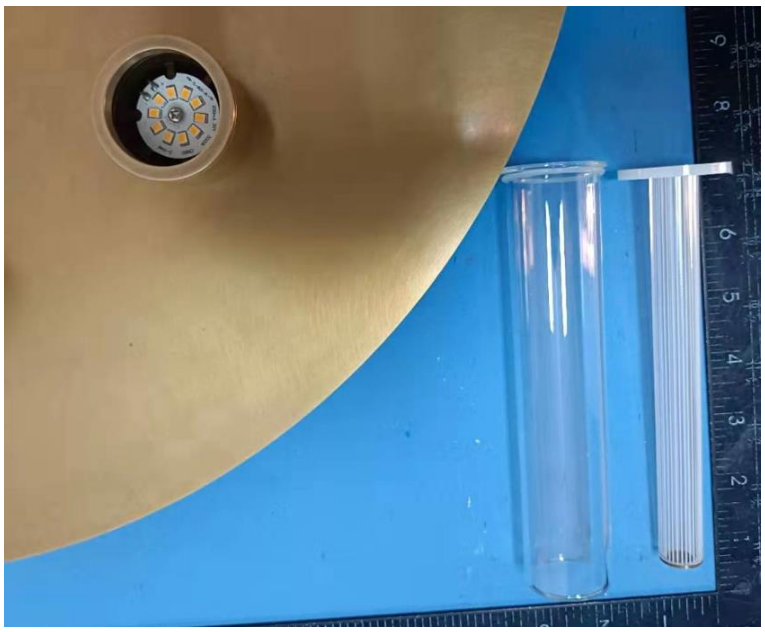
TEST REPORT

PRODUCT PICTURE (not to scale)



Internal view of 700FMKLA22*-LED927

View of LED Driver

In Charge Of Tests:

Duffe Zhong
Engineer

Report Reviewed By

Shelley Ying
Reviewer

Attachment: None

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