

Visual Comfort and Company

TEST REPORT

SCOPE OF WORK

LM-79 testing report

REPORT NUMBER

221205125GZU-005

ISSUE DATE

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REVISION DATE

None

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14

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Report No.: 221205125GZU-005

TEST REPORT

TEST OF ONE LED LUMINAIRE

MODEL NO. 700OFMSQGE92710BUNV

RENDERED TO

Visual Comfort and Company

Contact Name: Tess Gallagher

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<u>TEST:</u>	Electrical and Photometric as required to the IES LM-79 test standard.
<u>STATEMENT OF LIMITATION:</u>	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.
<u>AUTHORIZATION:</u>	The testing performed was authorized by signed quote number: QGZ221129088.
<u>STANDARDS USED:</u>	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
<u>DESCRIPTION OF SAMPLE:</u>	The client submitted one sample of model 700OFMSQGE92710BUNV. The sample was received, in undamaged condition. The sample designation was S221205125-005.
<u>DATES OF TESTS:</u>	03 January 2023
<u>ISSUED BY:</u>	Intertek Testing Services Shenzhen Ltd. Guangzhou Branch
<u>TEST LOCATION:</u>	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:	700OFMSQGE92710BUNV
Description:	LED Luminaries
Brand Name:	--

Test Condition: 120V, 60Hz For 700OFMSQGE92710BUNV

Criteria	Result
Total Lumen Output	921.5 lm
Total Power	29.9 W
Luminaire Efficacy	30.8 lm/W
S/MH(C0/180)	1.35
S/MH(C90/270)	1.34
Correlated Color Temperature (CCT)	2592 K
Color Rendering Index (CRI)	95
R9	68
Chromaticity Coordinate (x)	0.4702
Chromaticity Coordinate (y)	0.4146
Chromaticity Coordinate (u')	0.2674
Chromaticity Coordinate (v')	0.5304

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	D215S	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 EVERFINE - Digital Power Meter., model PLM3000.

Correction factor (self-absorption) has been considered when doing measurement.

Standard lamp used for Goniophotometer method:

Model: D215S

Current: 4.809A

Standard lamp used for integrating sphere:

Model: S82134

Current: 1.830

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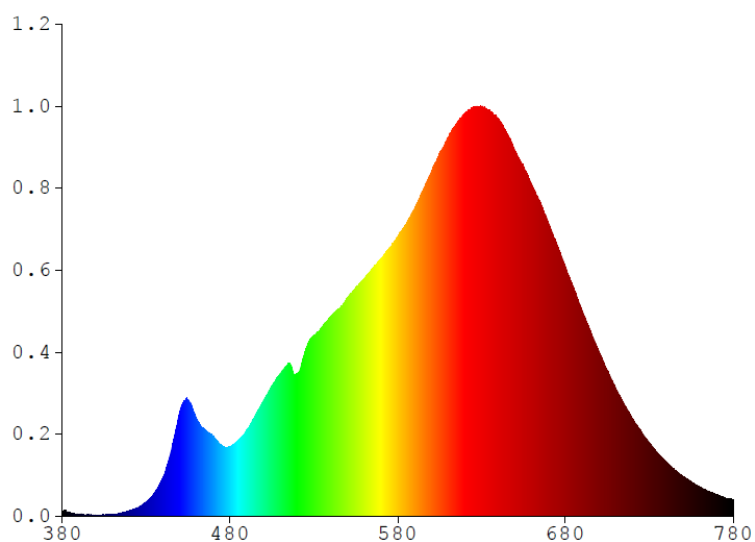
TEST REPORT

RESULTS OF TESTS

Test Condition: 120V, 60Hz For 700OFMSQGE92710BUNV

Spectral Distribution over Visible Wavelengths

nm	mW/nm	nm	mW/nm	nm	mW/nm	nm	mW/nm	nm	mW/nm
380	0.0085	480	0.1069	580	0.4290	680	0.3827	780	0.0258
385	0.0042	485	0.1171	585	0.4488	685	0.3492		
390	0.0029	490	0.1326	590	0.4718	690	0.3151		
395	0.0026	495	0.1544	595	0.4994	695	0.2836		
400	0.0018	500	0.1779	600	0.5280	700	0.2532		
405	0.0020	505	0.1998	605	0.5578	705	0.2244		
410	0.0032	510	0.2193	610	0.5813	710	0.1960		
415	0.0054	515	0.2348	615	0.6024	715	0.1717		
420	0.0084	520	0.2189	620	0.6185	720	0.1504		
425	0.0136	525	0.2541	625	0.6281	725	0.1304		
430	0.0220	530	0.2775	630	0.6275	730	0.1127		
435	0.0359	535	0.2912	635	0.6223	735	0.0971		
440	0.0595	540	0.3063	640	0.6101	740	0.0836		
445	0.1006	545	0.3188	645	0.5876	745	0.0717		
450	0.1595	550	0.3354	650	0.5606	750	0.0616		
455	0.1792	555	0.3516	655	0.5366	755	0.0529		
460	0.1496	560	0.3651	660	0.5085	760	0.0454		
465	0.1323	565	0.3807	665	0.4826	765	0.0387		
470	0.1233	570	0.3961	670	0.4487	770	0.0332		
475	0.1084	575	0.4123	675	0.4095	775	0.0286		



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TEST REPORT

RESULTS OF TESTS (cont'd)

Test Condition: 120V, 60Hz For 7000FMSQGE92710BUNV

Total operation burning time: 60 minutes

Stabilization time: 45 minutes

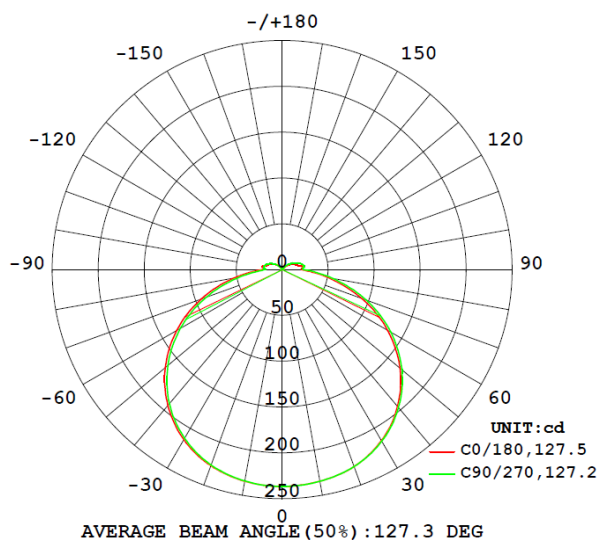
Photometric Measurements at 25°C – Integrating Sphere Method

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')
7000FMSQGE92710BUNV								
S2212051 25-005	--	2592	95	68	0.4702	0.4146	0.2674	0.5304

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)
7000FMSQGE92710BUNV							
S2212051 25-005	--	120.2	255.1	29.9	0.977	921.5	30.8

Intensity (Candlepower) Summary at 25°C – Candelas



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TEST REPORT

RESULTS OF TESTS (cont'd)

Test Condition: 120V, 60Hz For 7000FMSQGE92710BUNV

Intensity (Candlepower) Summary at 25°C - Candelas

V \ H(°)	0	22.5	45	67.5	90
0	236.3	236.3	236.5	236.6	236.6
5	235.9	235.5	235.7	235.9	236.0
10	234.4	233.7	234.1	234.4	234.5
15	232.2	231.0	231.6	231.8	232.1
20	228.5	226.8	228.0	228.4	228.6
25	223.0	220.8	223.2	223.5	223.4
30	215.6	213.0	216.8	217.0	216.4
35	206.2	203.5	208.6	208.6	207.4
40	195.0	192.3	198.5	198.5	196.7
45	181.8	179.2	186.5	186.4	184.0
50	166.9	164.6	172.6	172.6	169.8
55	150.3	148.2	157.0	157.1	153.8
60	132.2	130.4	139.4	139.8	136.2
65	112.7	111.1	120.4	121.1	117.1
70	92.1	90.9	100.2	101.1	96.9
75	71.0	70.2	79.5	80.5	76.1
80	51.0	51.1	59.5	59.9	56.0
85	33.3	34.2	41.9	42.4	37.8
90	22.0	25.9	29.7	28.4	24.0
95	21.5	26.7	29.5	26.6	22.5
100	23.0	25.6	29.1	27.1	24.2
105	17.9	22.5	25.9	24.5	22.9
110	16.2	18.7	21.9	20.9	20.6
115	14.2	14.6	17.5	17.0	18.1
120	12.1	11.0	13.1	13.9	15.5
125	9.8	7.8	8.3	11.0	12.7
130	7.5	4.9	3.7	8.1	9.9
135	4.8	2.3	0.8	5.2	6.8
140	2.3	0.5	0.5	2.4	3.7
145	0.5	0.6	0.6	0.5	0.9
150	0.6	0.6	0.6	0.6	0.5
155	0.6	0.6	0.6	0.6	0.5
160	0.6	0.6	0.6	0.6	0.6
165	0.6	0.6	0.6	0.6	0.6
170	0.6	0.5	0.5	0.5	0.5
175	0.5	0.4	0.4	0.4	0.5
180	0.4	0.4	0.4	0.4	0.4

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TEST REPORT

RESULTS OF TESTS (cont'd)

Test Condition: 120V, 60Hz For 7000FMSQGE92710BUNV

Zonal Lumen Summary and Percentages at 25°C

Zone	Lumens (lm)	% Luminaire (%)
7000FMSQGE92710BUNV		
0-30	190.7	20.7
0-40	320.1	34.7
0-60	599.1	65.0
0-90	840.2	91.2
60-90	241.1	26.2
0-180	921.5	100

Beam Angle

Total Beam Angle (°)

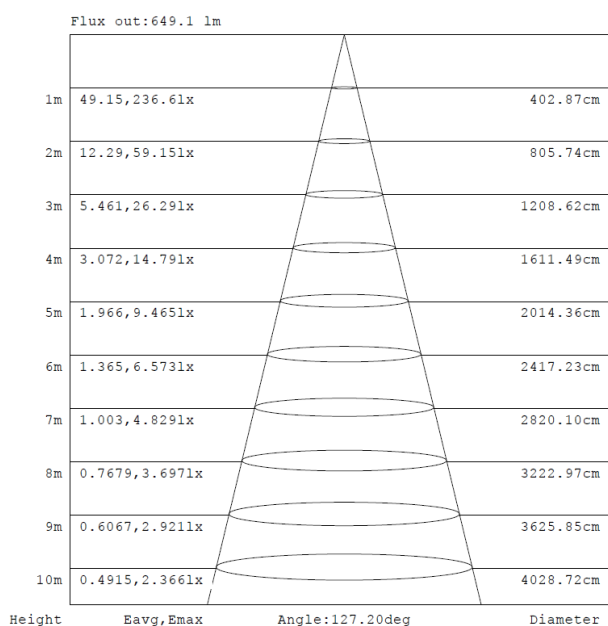
127.3

Illumination Plots

Model No.: 7000FMSQGE92710BUNV

Mount Height: 2.5 m

Illuminance - Cone of Light



Note: The Curves indicate the illuminated area and the average illumination when the luminaire is at different distance.

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TEST REPORT

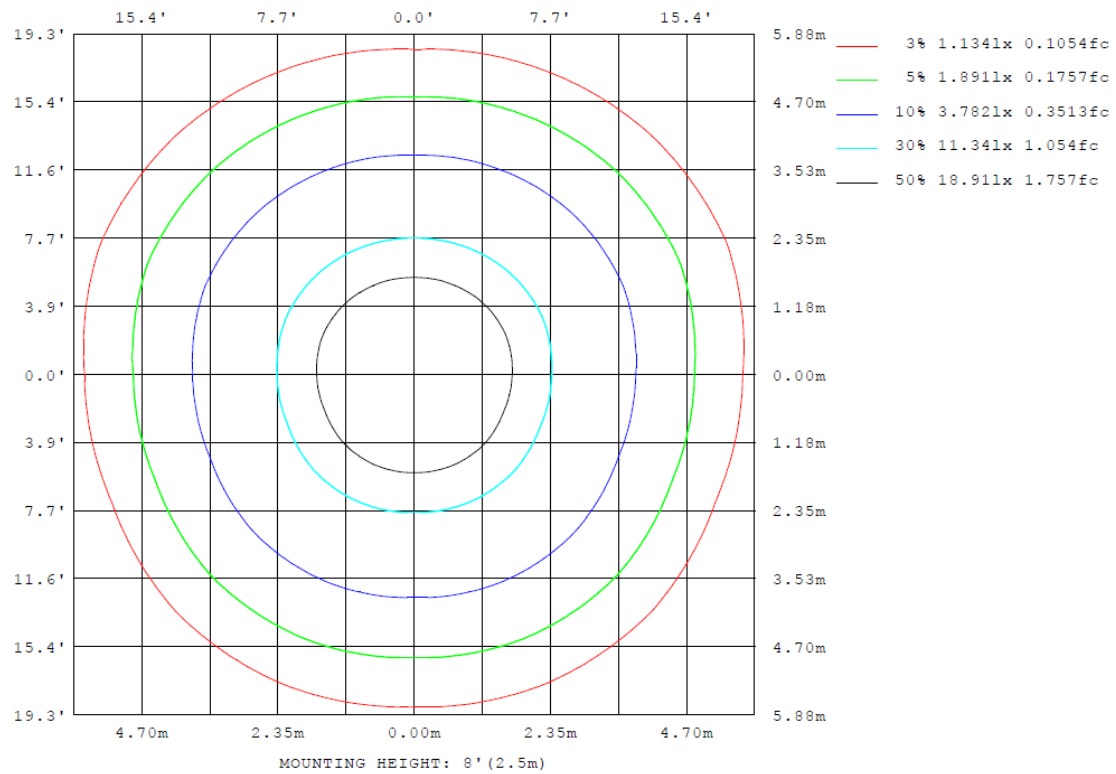
RESULTS OF TESTS (cont'd)

Test Condition: 120V, 60Hz For 7000FMSQGE92710BUNV

Model No.: 7000FMSQGE92710BUNV

Mount Height: 2.5 m

Isoillumination Plot



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TEST REPORT

RESULTS OF TESTS (cont'd)

Test Condition: 120V, 60Hz For 7000FMSQGE92710BUNV

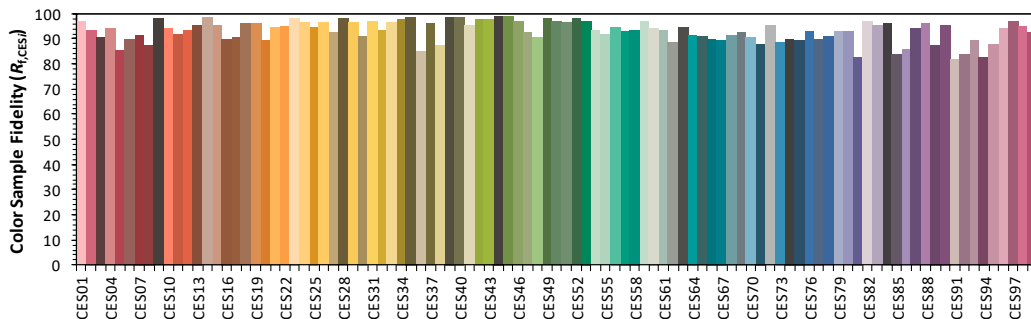
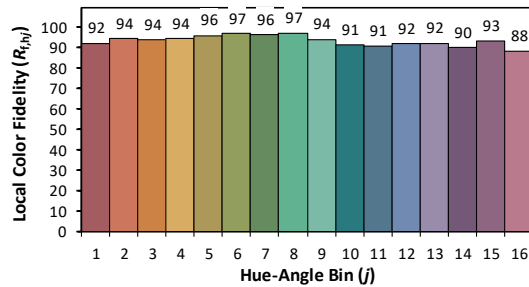
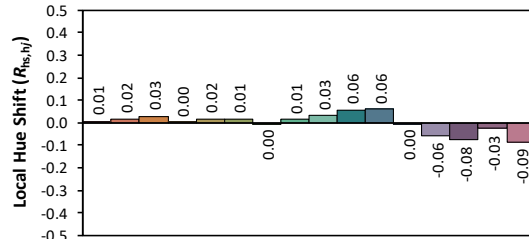
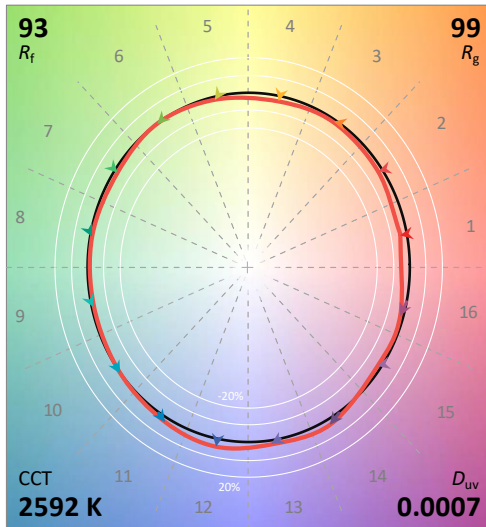
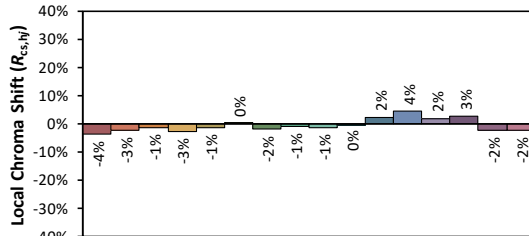
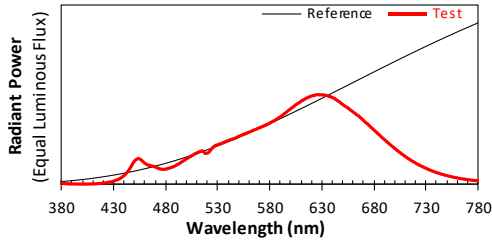
ANSI/IES TM-30-18 Color Rendition Report

Source: User SPD

Manufacturer: Visual Comfort and Company

Date: 2023/1/3

Model: 7000FMSQGE92710BUNV



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

x 0.4702
 y 0.4146
 u' 0.2674
 v' 0.5304

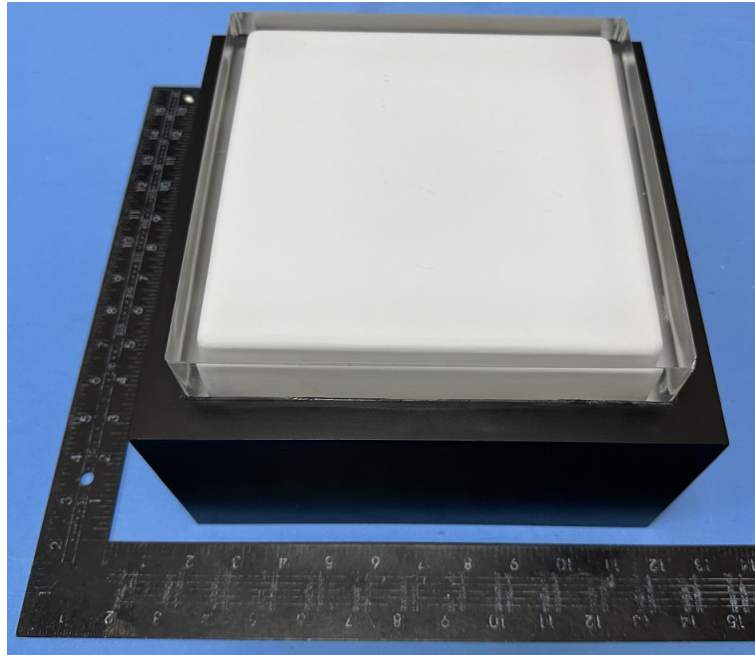
CIE 13.3-1995
(CRI)
 R_a 95
 R_g 68

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

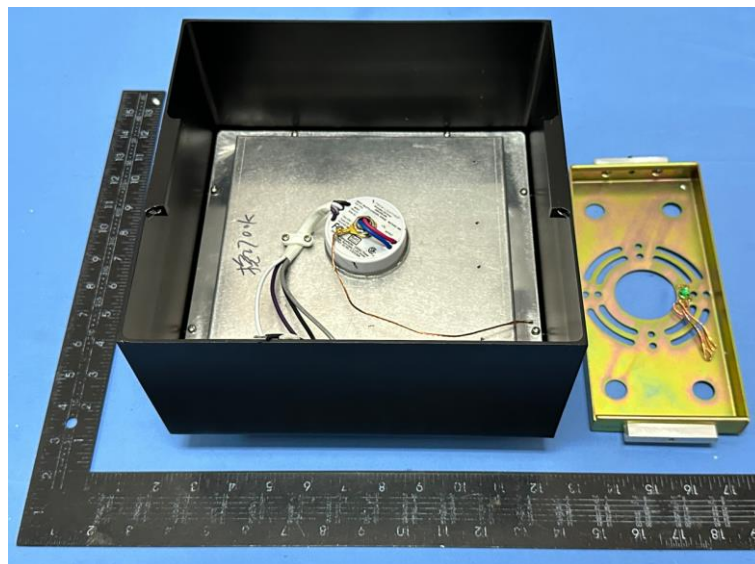
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TEST REPORT

PRODUCT PICTURE (not to scale)



External view of 700FMSQGE92710BUNV

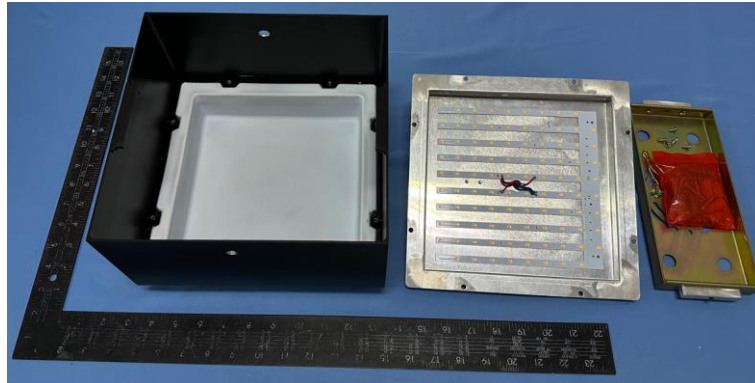


External view of 700FMSQGE92710BUNV

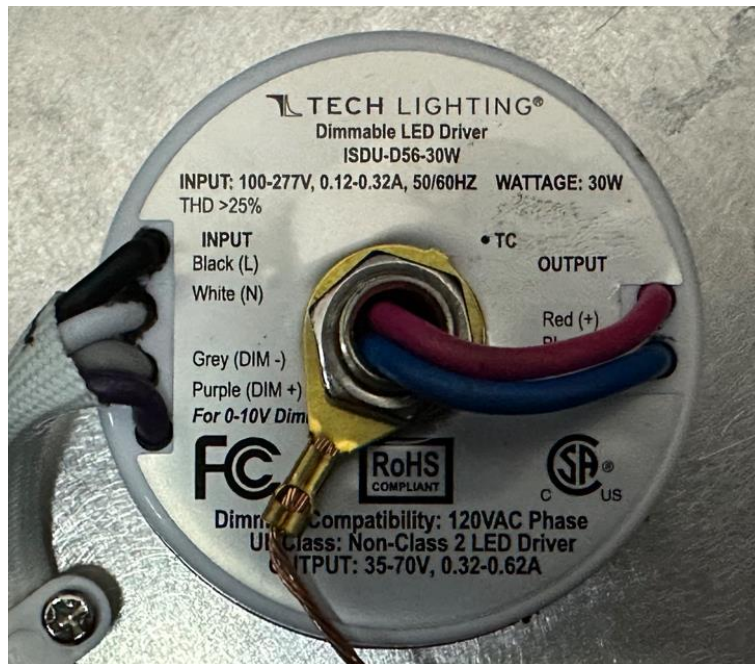
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TEST REPORT

PRODUCT PICTURE (not to scale)



Internal view of 7000FMSQGE92710BUNV

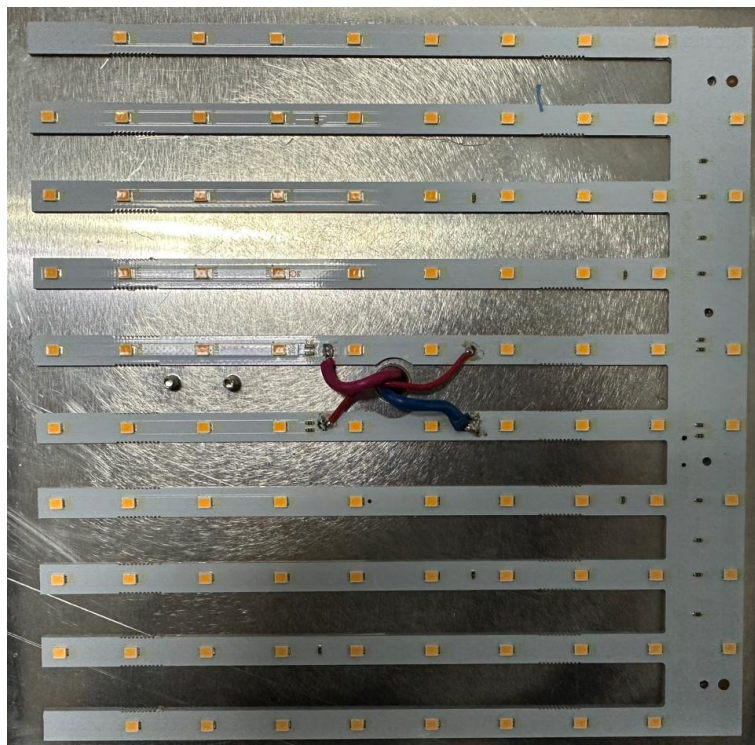


View of LED Driver ISDU-D56-30W

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TEST REPORT

PRODUCT PICTURE (not to scale)



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 *****