

Visual Comfort and Company

TEST REPORT

SCOPE OF WORK

LM-79 testing report

REPORT NUMBER

220401100GZU-024

ISSUE DATE

22 April 2022

REVISION DATE

None

NUMBER OF PAGES

14

DOCUMENT CONTROL NUMBER

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Report No.: 220401100GZU-024

TEST REPORT

TEST OF ONE LED LUMINAIRE

MODEL NO. 700TDMANMXX-LED930

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: QGZ220329042.

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 700TDMANMXX-LED930. The sample was received, in undamaged condition. The sample designation was S220401100-024.

DATES OF TESTS: 22 April 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:	700TDMANMXX-LED930 (Remark: "XX" denote other appearance colors for the characters that change)
Description:	LED Luminaries
Brand Name:	--

Test Condition: 120V, 60Hz For 700TDMANMXX-LED930

Criteria	Result
Total Lumen Output	463.9 lm
Total Power	8.5 W
Luminaire Efficacy	54.57 lm/W
S/MH(C0/180)	1.28
S/MH(C90/270)	1.29
Correlated Color Temperature (CCT)	3089 K
Color Rendering Index (CRI)	92
R9	58
Chromaticity Coordinate (x)	0.4269
Chromaticity Coordinate (y)	0.3936
Chromaticity Coordinate (u')	0.2486
Chromaticity Coordinate (v')	0.5157

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 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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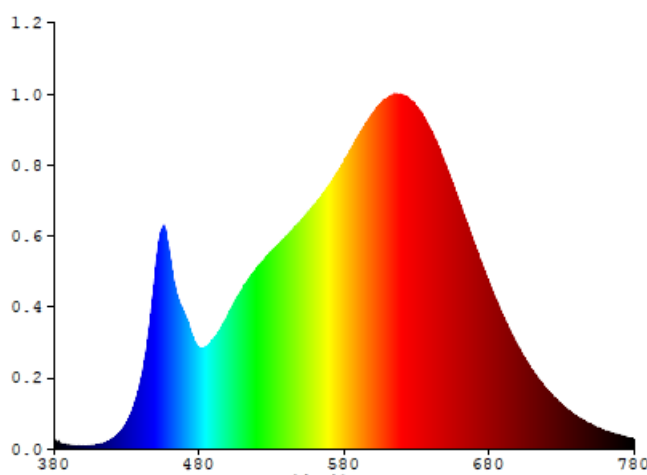
TEST REPORT

RESULTS OF TESTS

Test Condition: 120V, 60Hz For 700TDMANMXX-LED930

Spectral Distribution over Visible Wavelengths

nm	mW/nm	nm	mW/nm	nm	mW/nm	nm	mW/nm	nm	mW/nm
380	0.0619	480	0.7766	580	2.2087	680	1.2739	780	0.0740
385	0.0327	485	0.7843	585	2.3125	685	1.1406		
390	0.0241	490	0.8467	590	2.4077	690	1.0086		
395	0.0151	495	0.9274	595	2.5092	695	0.8904		
400	0.0159	500	1.0310	600	2.5878	700	0.7830		
405	0.0206	505	1.1396	605	2.6518	705	0.6856		
410	0.0259	510	1.2313	610	2.6991	710	0.5990		
415	0.0460	515	1.3189	615	2.7247	715	0.5234		
420	0.0736	520	1.3921	620	2.7245	720	0.4541		
425	0.1186	525	1.4579	625	2.6913	725	0.3910		
430	0.1979	530	1.5227	630	2.6289	730	0.3383		
435	0.3234	535	1.5748	635	2.5507	735	0.2916		
440	0.5333	540	1.6324	640	2.4481	740	0.2509		
445	0.8635	545	1.6938	645	2.3247	745	0.2157		
450	1.3711	550	1.7509	650	2.1863	750	0.1865		
455	1.7080	555	1.8171	655	2.0371	755	0.1601		
460	1.4561	560	1.8804	660	1.8800	760	0.1359		
465	1.1629	565	1.9544	665	1.7299	765	0.1173		
470	1.0309	570	2.0342	670	1.5680	770	0.1006		
475	0.8724	575	2.1225	675	1.3865	775	0.0865		



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TEST REPORT

RESULTS OF TESTS (cont'd)

Test Condition: 120V, 60Hz For 700TDMANMXX-LED930

Total operation burning time: 60 minutes

Stabilization time: 45 minutes

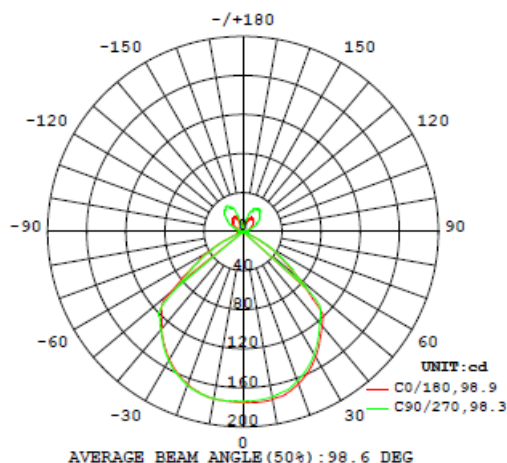
Photometric Measurements at 25°C – Integrating Sphere Method

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')
700TDMANMXX-LED930								
S2204011 00-024	--	3089	92	58	0.4269	0.3936	0.2486	0.5157

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)
700TDMANMXX-LED930							
S2204011 00-024	--	120.0	80.0	8.5	0.887	463.9	54.57

Intensity (Candlepower) Summary at 25°C – Candelas



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TEST REPORT

RESULTS OF TESTS (cont'd)

Test Condition: 120V, 60Hz For 700TDMANMXX-LED930

Intensity (Candlepower) Summary at 25°C - Candelas

V \ H(°)	0	22.5	45	67.5	90
0	175.1	174.7	174.5	174.2	173.9
5	175.3	174.8	174.4	173.9	173.4
10	174.3	173.5	172.7	172.4	171.7
15	171.8	171.0	170.3	169.7	168.7
20	165.9	165.2	164.2	163.6	162.7
25	158.2	157.6	156.8	155.9	155.0
30	148.3	147.5	147.1	146.6	145.2
35	136.8	135.8	134.9	135.0	134.1
40	126.1	124.3	123.0	122.9	122.4
45	110.0	109.9	111.3	112.9	112.0
50	73.8	71.1	69.6	72.1	73.5
55	48.5	47.7	46.7	51.6	51.4
60	29.4	30.0	29.0	30.1	32.9
65	6.3	6.5	6.7	7.0	7.2
70	4.7	5.0	5.2	5.5	5.6
75	3.6	3.8	4.0	4.2	4.4
80	2.0	2.1	2.4	2.7	3.1
85	0.6	0.5	0.5	0.6	0.8
90	0.5	0.5	0.5	0.5	0.4
95	0.9	0.9	0.9	0.7	0.7
100	2.0	1.9	2.0	1.6	1.5
105	4.4	4.6	5.9	4.8	3.9
110	4.5	9.0	9.3	8.5	7.4
115	8.2	16.7	13.3	12.4	12.3
120	10.3	19.1	16.6	15.2	16.6
125	12.1	22.3	20.2	19.0	19.2
130	14.0	26.2	22.8	20.8	21.8
135	15.4	27.6	25.8	23.8	24.8
140	16.6	29.8	26.7	27.3	28.6
145	17.0	29.6	30.0	29.3	28.3
150	17.3	26.8	29.8	26.8	27.3
155	12.6	21.3	27.0	22.7	26.6
160	9.8	14.9	24.1	19.1	21.6
165	3.9	5.0	8.5	13.2	13.8
170	0.7	0.8	1.5	3.0	2.1
175	0.3	0.3	0.3	0.3	0.3
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 700TDMANMXX-LED930

Zonal Lumen Summary and Percentages at 25°C

Zone	Lumens (lm)	% Luminaire (%)
700TDMANMXX-LED930		
0-30	137.4	29.6
0-40	223.9	48.3
0-60	360.5	77.7
0-90	380.7	82.1
60-90	20.2	4.4
0-180	463.9	100

Beam Angle

Total Beam Angle (°)

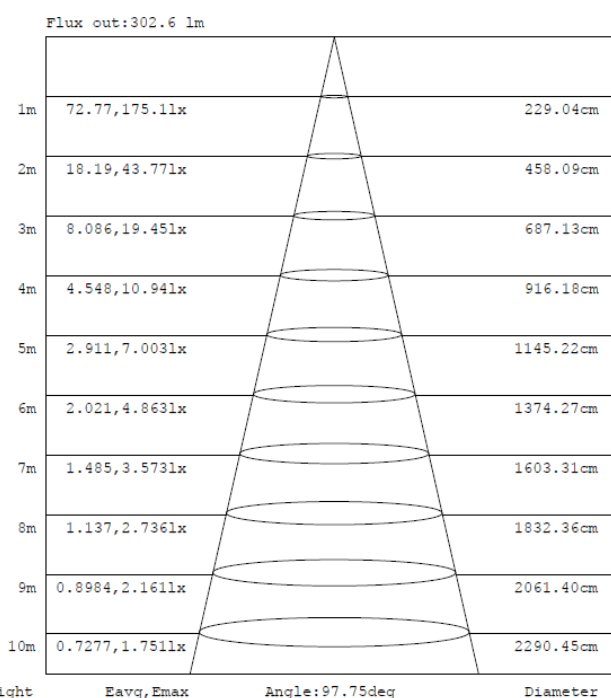
98.6

Illumination Plots

Model No.: 700TDMANMXX-LED930

Mount Height: 2.5 m

Illuminance - Cone of Light



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TEST REPORT

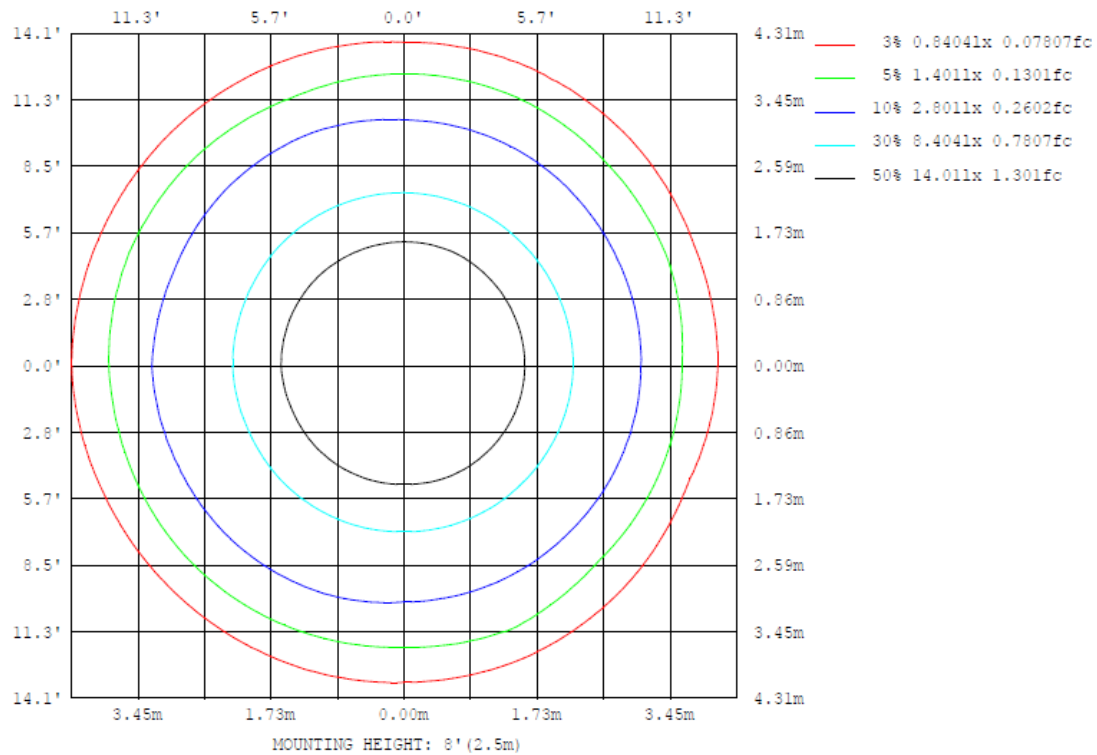
RESULTS OF TESTS (cont'd)

Test Condition: 120V, 60Hz For 700TDMANMXX-LED930

Model No.: 700TDMANMXX-LED930

Mount Height: 2.5 m

Isoillumination Plot



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TEST REPORT

RESULTS OF TESTS (cont'd)

Test Condition: 120V, 60Hz For 700TDMANMXX-LED930

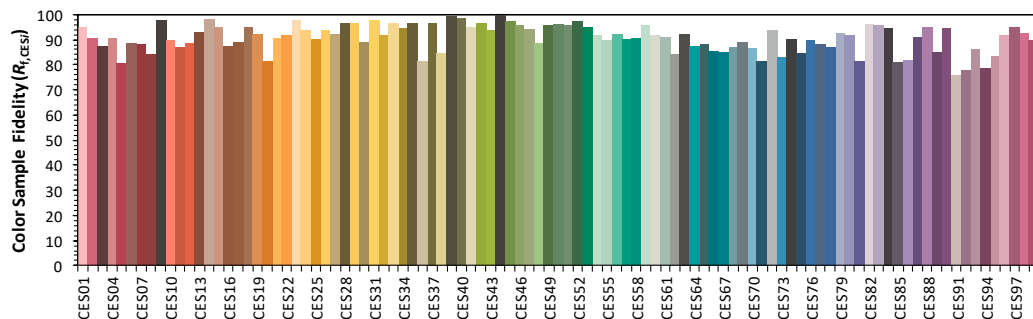
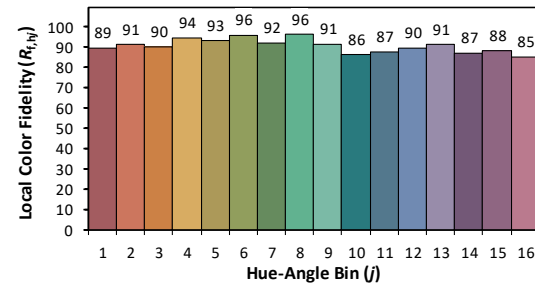
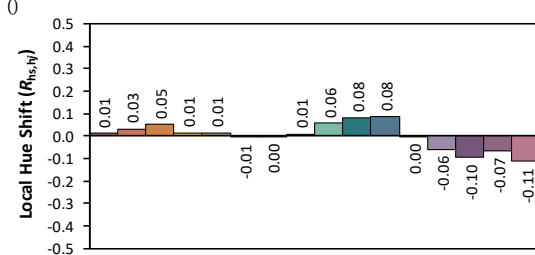
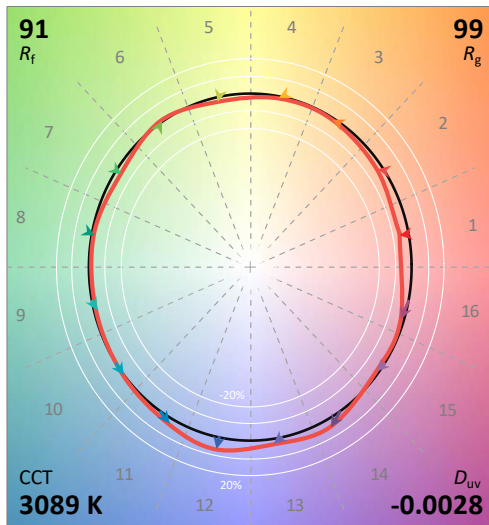
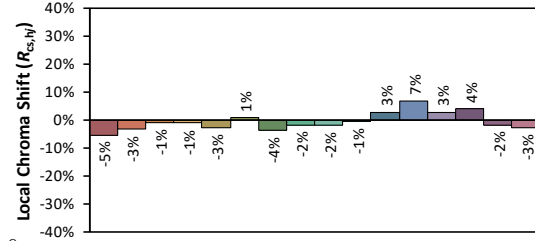
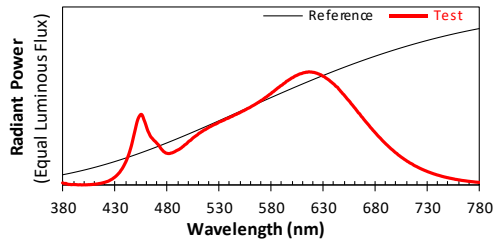
ANSI/IES TM-30-18 Color Rendition Report

Source: User SPD

Manufacturer: Visual Comfort and Company

Date: 2022/4/22

Model: 700TDMANMXX-LED930



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

x 0.4269
 y 0.3936
 u' 0.2486
 v' 0.5157

CIE 13.3-1995
(CRI)
 R_a 92
 R_g 58

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 700TDMANMXX-LED930



External view of 700TDMANMXX-LED930

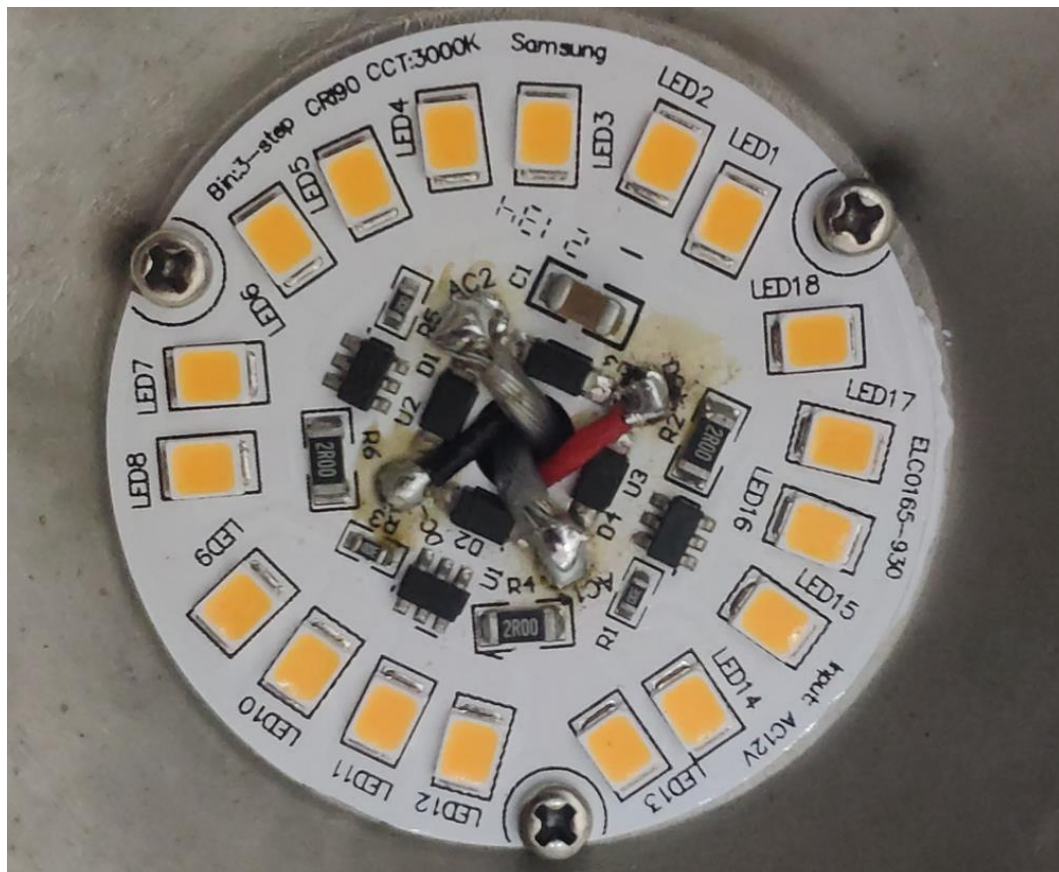
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TEST REPORT

PRODUCT PICTURE (not to scale)



View of LED Driver DA50W1400C2036-3001



View of LED

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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 *****