

Visual Comfort & Co.

TEST REPORT

SCOPE OF WORK

LM-79 testing report

REPORT NUMBER

240621176GZU-010

ISSUE DATE

08 October 2024

REVISION DATE

Modification 1: 06 November 2024

NUMBER OF PAGES

13

DOCUMENT CONTROL NUMBER

Report format for LM-79_G

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Report No.: 240621176GZU-010
Modification 1: 06 November 2024

TEST REPORT

TEST OF ONE LED LUMINAIRE

MODEL NO. PBCH36127XX

Remark: "XX" are denoted appearance color.

RENDERED TO

Visual Comfort & Co.

Contact Name: Adam Same

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<u>TEST:</u>	Electrical and Photometric as required to the IES LM-79 test standard.
<u>AUTHORIZATION:</u>	The testing performed was authorized by signed quote number: QGZ240620045.
<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-79-19	Approved Method for the Electrical and Photometric Measurements of Solid-State Lighting Products
ANSI C78.377-2017 (R2022)	Specifications of the Chromaticity of Solid State Lighting Products
<u>DESCRIPTION OF SAMPLE:</u>	The client submitted one sample of model PBCH36127XX. The sample was received by Intertek in undamaged condition and tested as received. The sample designation was S240621176-011.
<u>MANUFACTURER /FACTORY & ADDRESS:</u>	Guangzhou Xiongyi Precision Metalworking Co., Ltd Hantang Industrial Zone, Langbian Village, Shiji Town, Panyu District, Guangzhou City, Guangdong Province, China 511450
<u>DATES OF TESTS:</u>	25 July 2024
<u>ISSUED BY:</u>	Intertek Testing Services Shenzhen Ltd. Guangzhou Branch
<u>TEST LOCATION:</u>	Room101/301/401/102/202/302/402/502/602/702/802, No. 7-2, Caipin Road, Huangpu District, Guangzhou, Guangdong, China

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TEST REPORT

SUMMARY

Model Number:	PBCH36127XX
Description:	LED Luminaries
Brand Name:	--

Test Condition: 120V, 60Hz For PBCH36127XX

Criteria	Result
Total Lumen Output	860.7 lm
Total Power	10.5 W
Luminaire Efficacy	81.7 lm/W
S/MH(C0/180)	1.50
S/MH(C90/270)	1.45
Correlated Color Temperature (CCT)	2723 K
Color Rendering Index (CRI)	94
R9	75
Chromaticity Coordinate (x)	0.4559
Chromaticity Coordinate (y)	0.4064
Chromaticity Coordinate (u')	0.2618
Chromaticity Coordinate (v')	0.5251

Remark:

Revision history:

Modification 1: Based on and superseded the previous report 240621176GZU-010 issued on 08 October 2024, correct the manufacturer information on page 2 of the report, correct the applicant name on page 1 and 2 of the report.

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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	S500-TH	SA047-182

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 WT310E.

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

Standard lamp used for Goniophotometer method:

Model: D215S

Current: 4.809A DC

Standard lamp used for integrating sphere:

Model: D204

Current: 3.948A DC

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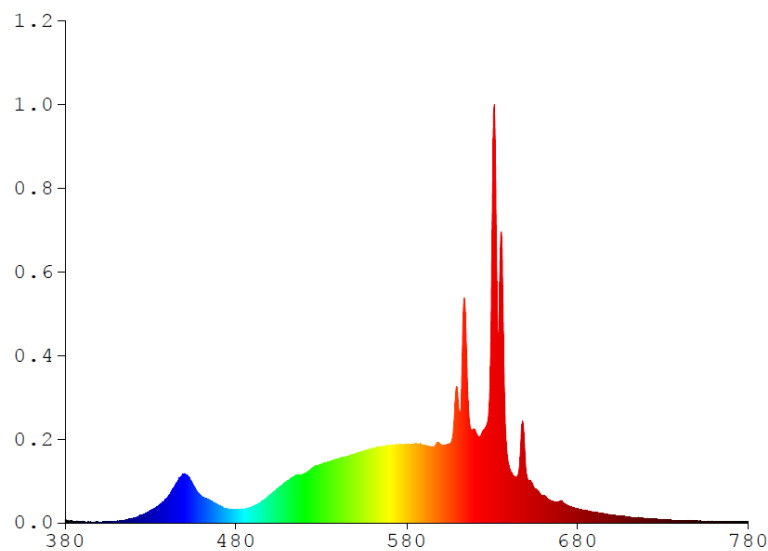
TEST REPORT

RESULTS OF TESTS

Test Condition: 120V, 60Hz For PBCH36127XX

Spectral Distribution over Visible Wavelengths

nm	mW/nm	nm	mW/nm	nm	mW/nm	nm	mW/nm	nm	mW/nm
380	0.0319	480	0.1731	580	1.0278	680	0.1850	780	0.0194
385	0.0175	485	0.1836	585	1.0382	685	0.1590		
390	0.0072	490	0.2155	590	1.0151	690	0.1391		
395	0.0109	495	0.2803	595	0.9988	695	0.1208		
400	0.0094	500	0.3647	600	1.0210	700	0.1051		
405	0.0178	505	0.4622	605	1.0361	705	0.0907		
410	0.0155	510	0.5490	610	1.5720	710	0.0788		
415	0.0356	515	0.6211	615	2.1287	715	0.0675		
420	0.0643	520	0.6413	620	1.2135	720	0.0574		
425	0.1011	525	0.7258	625	1.2204	725	0.0511		
430	0.1615	530	0.7707	630	4.0564	730	0.0440		
435	0.2339	535	0.8055	635	3.7797	735	0.0380		
440	0.3386	540	0.8418	640	0.7205	740	0.0331		
445	0.5196	545	0.8722	645	0.6178	745	0.0294		
450	0.6422	550	0.9075	650	0.6481	750	0.0254		
455	0.4934	555	0.9426	655	0.4463	755	0.0212		
460	0.3457	560	0.9724	660	0.3575	760	0.0192		
465	0.2936	565	1.0007	665	0.2829	765	0.0179		
470	0.2299	570	1.0159	670	0.2885	770	0.0153		
475	0.1825	575	1.0224	675	0.2117	775	0.0134		



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TEST REPORT

RESULTS OF TESTS (cont'd)

Test Condition: 120V, 60Hz For PBCH36127XX

Total operation burning time: 60 minutes
Stabilization time: 30 minutes

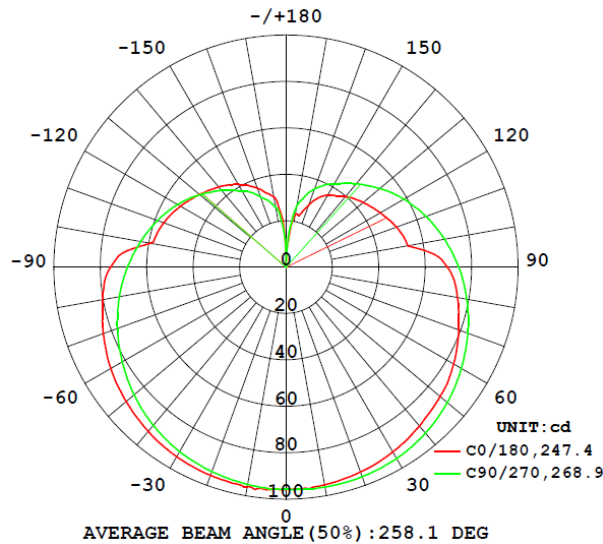
Photometric Measurements at 25°C – Distribution Method

Intertek Sample No.	Base Orientation	Correlated Color Temperature (K)	CRI	R9	CIE 31'	CIE 31'	CIE 76'	CIE 76'
					Chromaticit	Chromaticit	Chromaticit	Chromaticit
					y	y	y	y
					Coordinate	Coordinate	Coordinate	Coordinate
					(x)	(y)	(u')	(v')
PBCH36127XX								
S2406211 76-011	base-up	2723	94	75	0.4559	0.4064	0.2618	0.5251

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)
PBCH36127XX							
S2406211 76-011	base-up	120.1	89.4	10.5	0.982	860.7	81.7

Intensity (Candlepower) Summary at 25°C - Candelas



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

TEST REPORT

RESULTS OF TESTS (cont'd)

Test Condition: 120V, 60Hz For PBCH36127XX

Intensity (Candlepower) Summary at 25°C - Candelas

V \ H(°)	0	22.5	45	67.5	90
0	95.8	95.8	95.8	95.8	95.8
5	95.6	95.7	95.8	96.0	96.1
10	95.2	95.4	95.7	95.9	96.2
15	94.6	94.9	95.4	95.8	96.2
20	93.9	94.3	94.9	95.5	96.1
25	93.1	93.5	94.2	95.0	95.7
30	92.0	92.4	93.3	94.3	95.2
35	90.7	91.1	92.2	93.3	94.4
40	89.3	89.5	90.8	92.1	93.4
45	87.9	87.8	89.2	90.6	92.2
50	86.7	85.9	87.4	89.0	90.7
55	85.3	83.8	85.4	87.2	89.0
60	83.4	81.9	83.4	85.3	87.2
65	81.3	80.3	81.3	83.2	85.3
70	79.2	78.4	79.5	81.2	83.3
75	77.1	76.3	77.5	79.2	81.2
80	75.0	73.9	75.3	77.0	79.0
85	72.9	71.5	72.9	74.7	76.8
90	69.6	69.0	70.5	72.3	74.4
95	64.0	66.4	68.1	69.9	71.9
100	53.4	63.5	65.6	67.3	69.4
105	52.3	59.7	63.0	64.8	66.8
110	50.7	55.6	60.2	62.2	64.2
115	48.8	52.2	57.2	59.5	61.5
120	46.9	49.3	54.1	56.7	58.7
125	45.1	46.9	51.3	53.8	55.8
130	43.5	44.9	48.7	50.9	52.8
135	41.7	43.2	46.3	48.3	49.8
140	39.8	41.4	44.1	45.7	47.0
145	37.7	39.4	41.5	43.1	44.4
150	36.1	37.0	38.3	40.9	41.6
155	33.0	33.9	34.8	37.7	39.0
160	28.5	29.3	31.3	34.3	35.8
165	23.6	25.9	27.5	29.7	31.7
170	23.0	22.8	24.3	26.0	26.9
175	11.7	13.5	16.0	14.9	15.5
180	0.1	0.7	1.2	0.0	0.0

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

TEST REPORT

RESULTS OF TESTS (cont'd)

Test Condition: 120V, 60Hz For PBCH36127XX

Zonal Lumen Summary and Percentages at 25°C

Zone	Lumens (lm)	% Luminaire (%)
PBCH36127XX		
0-30	79.7	9.3
0-40	137.5	16.0
0-60	284.0	33.0
0-90	529.2	61.5
60-90	245.2	28.5
0-180	860.7	100.0

Beam Angle

Total Beam Angle(°)

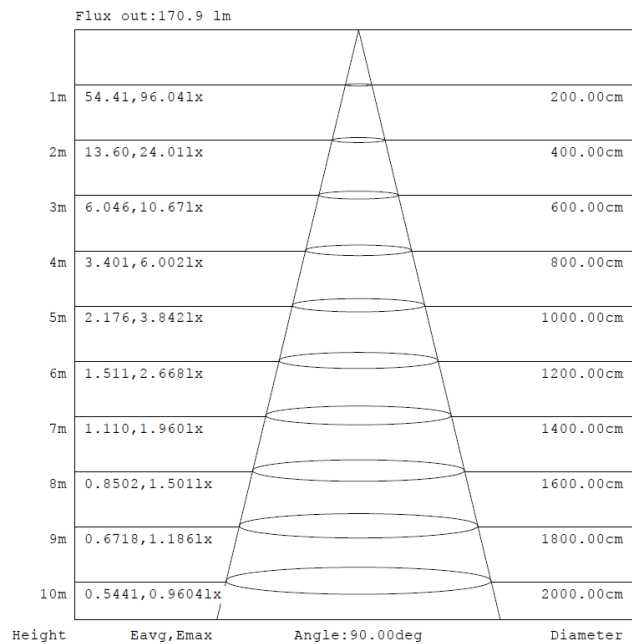
258.1

Illumination Plots

Model No.: PBCH36127XX

Mount Height: 2.5 m

Illuminance - Cone of Light



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TEST REPORT

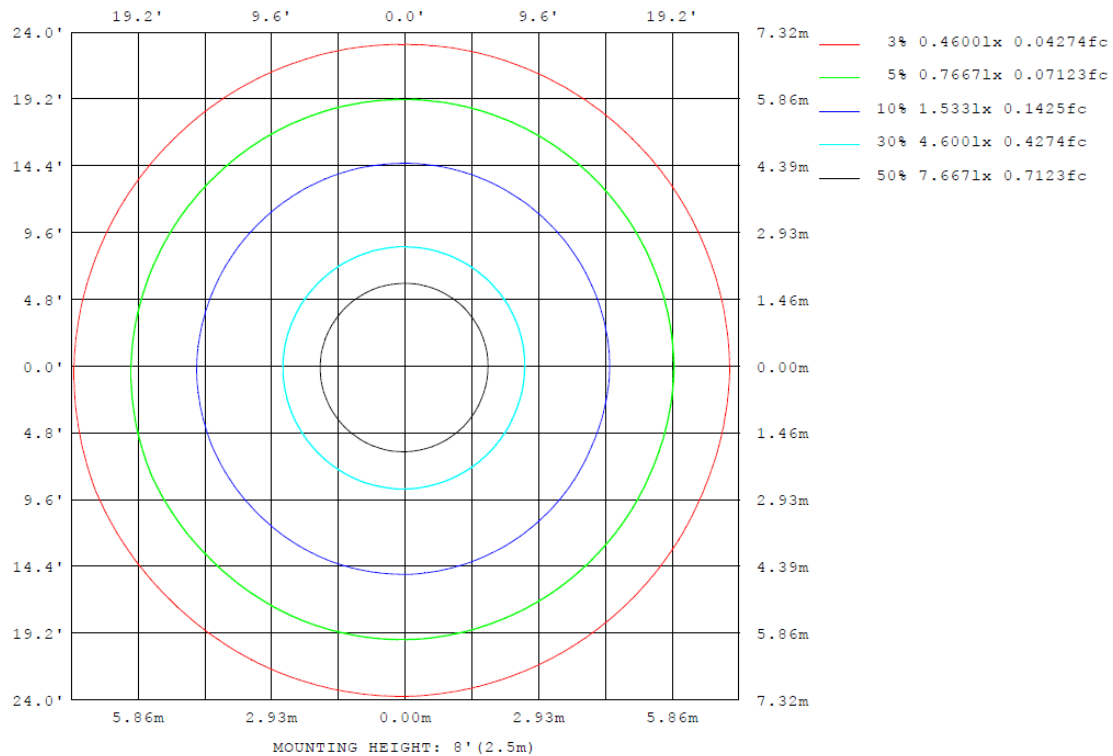
RESULTS OF TESTS (cont'd)

Test Condition: 120V, 60Hz For PBCH36127XX

Model No.: PBCH36127XX

Mount Height: 2.5 m

Isoillumination Plot



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TEST REPORT

RESULTS OF TESTS (cont'd)

Test Condition: 120V, 60Hz For PBCH36127XX

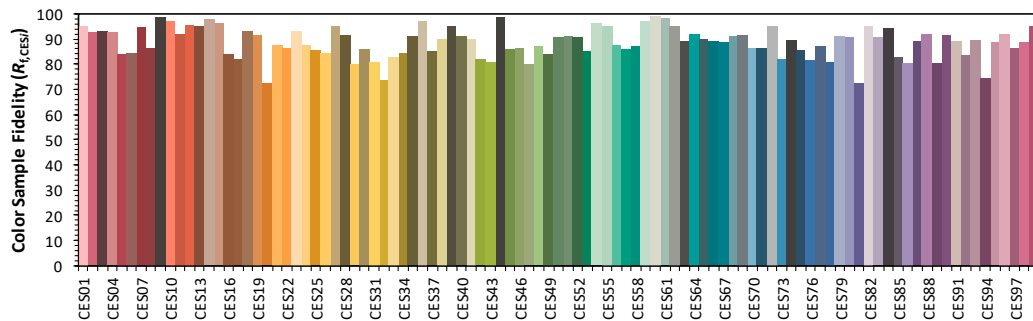
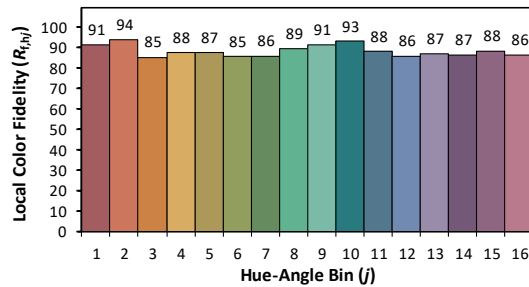
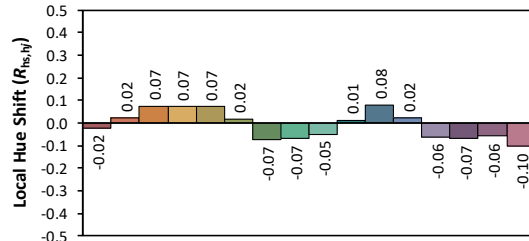
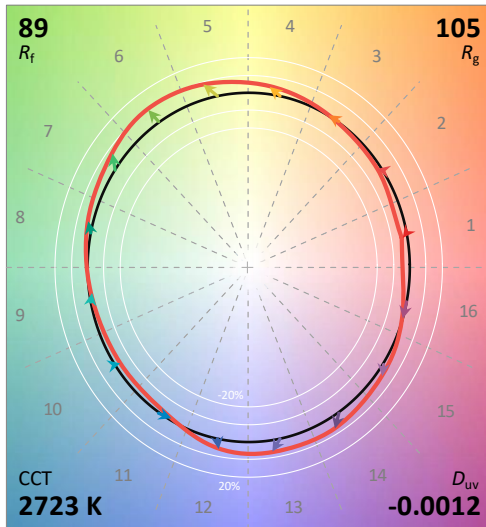
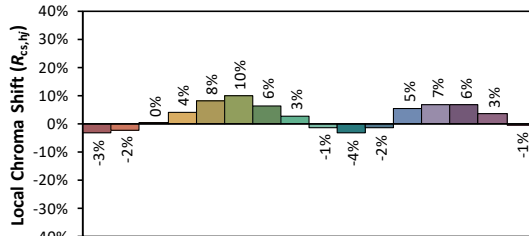
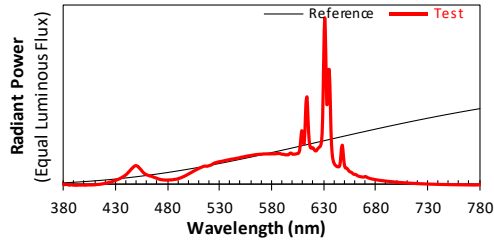
ANSI/IES TM-30-18 Color Rendition Report

Source: User SPD

Manufacturer: Visual Comfort and Company

Date: 2024/7/25

Model: PBCH36127XX



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

x 0.4559
 y 0.4064
 u' 0.2618
 v' 0.5251

CIE 13.3-1995
(CRI)

R_a 94
 R_g 75

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

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

TEST REPORT

PRODUCT PICTURE (not to scale)



External view of PBCH36127XX



External view of PBCH36127XX

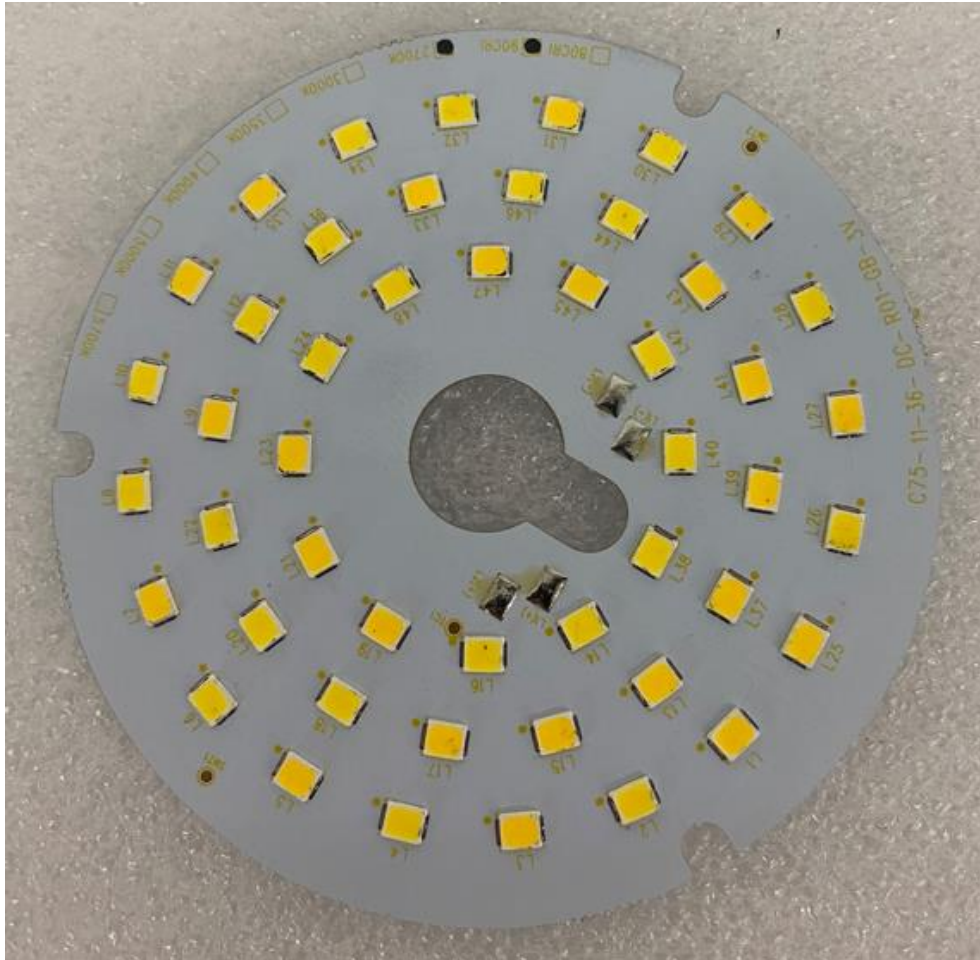


View of LED driver ISDU-D56-10W

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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 *****