

Visual Comfort & Co.

TEST REPORT

SCOPE OF WORK

LM-79 testing report

REPORT NUMBER

240729032GZU-001

ISSUE DATE

09 October 2024

REVISION DATE

Modification 1: 28 November 2024

NUMBER OF PAGES

13

DOCUMENT CONTROL NUMBER

Report format for LM-79_G

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Report No.: 240729032GZU-001
Modification 1: 28 November 2024

TEST REPORT

TEST OF ONE LED LUMINAIRE

MODEL NO. AKPD17027XX

Remark: "XX" are denoted appearance color.

RENDERED TO

Visual Comfort & Co.

Contact Name: Javan Rivero

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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: QGZ240726006.
<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 AKPD17027XX. The sample was received by Intertek in undamaged condition and tested as received. The sample designation was S240729032-001.
<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>	06 August 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

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

TEST REPORT

SUMMARY

Model Number:	AKPD17027XX
Description:	LED Luminaries
Brand Name:	--

Test Condition: 120V, 60Hz For AKPD17027XX

Criteria	Result
Total Lumen Output	40.2 lm
Total Power	15.7 W
Luminaire Efficacy	2.6 lm/W
S/MH(C0/180)	2.72
S/MH(C90/270)	2.75
Correlated Color Temperature (CCT)	2746 K
Color Rendering Index (CRI)	94
R9	74
Chromaticity Coordinate (x)	0.4570
Chromaticity Coordinate (y)	0.4113
Chromaticity Coordinate (u')	0.2603
Chromaticity Coordinate (v')	0.5272

Remark:

Modification 1: Based on and superseded the previous report 240729032GZU-001 issued on 09 October 2024, correct the manufacturer information on page 2 of the report, Correct the applicant information on page 1 and 2 of the report.

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

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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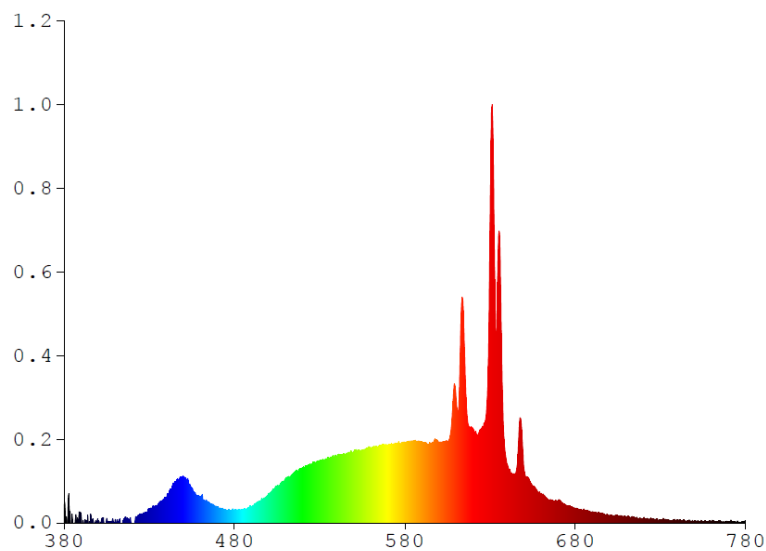
TEST REPORT

RESULTS OF TESTS

Test Condition: 120V, 60Hz For AKPD17027XX

Spectral Distribution over Visible Wavelengths

nm	mW/nm	nm	mW/nm	nm	mW/nm	nm	mW/nm	nm	mW/nm
380	0.0079	480	0.0062	580	0.0420	680	0.0076	780	0.0010
385	0.0000	485	0.0071	585	0.0424	685	0.0071		
390	0.0029	490	0.0084	590	0.0423	690	0.0057		
395	0.0005	495	0.0115	595	0.0409	695	0.0052		
400	0.0000	500	0.0152	600	0.0424	700	0.0039		
405	0.0024	505	0.0192	605	0.0425	705	0.0035		
410	0.0018	510	0.0234	610	0.0639	710	0.0033		
415	0.0018	515	0.0262	615	0.0859	715	0.0030		
420	0.0000	520	0.0291	620	0.0492	720	0.0025		
425	0.0041	525	0.0309	625	0.0496	725	0.0019		
430	0.0074	530	0.0327	630	0.1615	730	0.0012		
435	0.0095	535	0.0338	635	0.1495	735	0.0013		
440	0.0131	540	0.0348	640	0.0305	740	0.0014		
445	0.0216	545	0.0358	645	0.0260	745	0.0008		
450	0.0242	550	0.0369	650	0.0271	750	0.0009		
455	0.0181	555	0.0383	655	0.0191	755	0.0007		
460	0.0131	560	0.0393	660	0.0153	760	0.0009		
465	0.0102	565	0.0405	665	0.0119	765	0.0012		
470	0.0084	570	0.0407	670	0.0118	770	0.0004		
475	0.0068	575	0.0416	675	0.0088	775	0.0008		



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TEST REPORT

RESULTS OF TESTS (cont'd)

Test Condition: 120V, 60Hz For AKPD17027XX

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

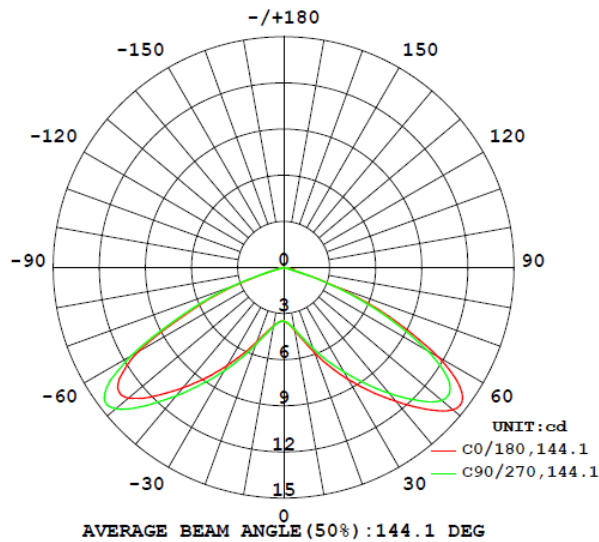
Photometric Measurements at 25°C – Distribution Method

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')
AKPD17027XX								
S2407290 32-001	base-up	2746	94	74	0.4570	0.4113	0.2603	0.5272

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)
AKPD17027XX							
S2407290 32-001	base-up	120.1	131.6	15.7	0.990	40.2	2.6

Intensity (Candlepower) Summary at 25°C - Candelas



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

TEST REPORT

RESULTS OF TESTS (cont'd)

Test Condition: 120V, 60Hz For AKPD17027XX

Intensity (Candlepower) Summary at 25°C - Candelas

V \ H(°)	0	22.5	45	67.5	90
0	3.5	3.5	3.5	3.5	3.5
5	3.7	3.7	3.7	3.7	3.7
10	4.2	4.2	4.2	4.1	4.1
15	4.9	4.9	4.9	4.8	4.7
20	5.9	5.9	5.9	5.7	5.6
25	7.1	7.1	6.9	6.8	6.7
30	8.4	8.3	8.2	8.0	7.8
35	9.8	9.7	9.5	9.4	9.2
40	11.4	11.2	11.0	10.9	10.7
45	13.0	12.8	12.6	12.4	12.2
50	14.4	14.0	13.8	13.7	13.4
55	14.2	13.9	13.6	13.4	13.2
60	11.6	11.5	11.3	11.0	10.8
65	7.5	7.6	7.5	7.2	7.0
70	3.5	3.5	3.4	3.3	3.2
75	0.4	0.5	0.5	0.5	0.4
80	0.0	0.0	0.0	0.0	0.0
85	0.0	0.0	0.0	0.0	0.0
90	0.0	0.0	0.0	0.0	0.0
95	0.0	0.0	0.0	0.0	0.0
100	0.0	0.0	0.0	0.0	0.0
105	0.0	0.0	0.0	0.0	0.0
110	0.0	0.0	0.0	0.0	0.0
115	0.0	0.0	0.0	0.0	0.0
120	0.0	0.0	0.0	0.0	0.0
125	0.0	0.0	0.0	0.0	0.0
130	0.0	0.0	0.0	0.0	0.0
135	0.0	0.0	0.0	0.0	0.0
140	0.0	0.0	0.0	0.0	0.0
145	0.0	0.0	0.0	0.0	0.0
150	0.0	0.0	0.0	0.0	0.0
155	0.0	0.0	0.0	0.0	0.0
160	0.0	0.0	0.0	0.0	0.0
165	0.0	0.0	0.0	0.0	0.0
170	0.0	0.0	0.0	0.0	0.0
175	0.0	0.0	0.0	0.0	0.0
180	0.0	0.0	0.0	0.0	0.0

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

TEST REPORT

RESULTS OF TESTS (cont'd)

Test Condition: 120V, 60Hz For AKPD17027XX

Zonal Lumen Summary and Percentages at 25°C

Zone	Lumens (lm)	% Luminaire (%)
AKPD17027XX		
0-30	4.8	11.9
0-40	10.6	26.5
0-60	32.2	80.0
0-90	40.2	99.9
60-90	8.0	19.9
0-180	40.2	100.0

Beam Angle

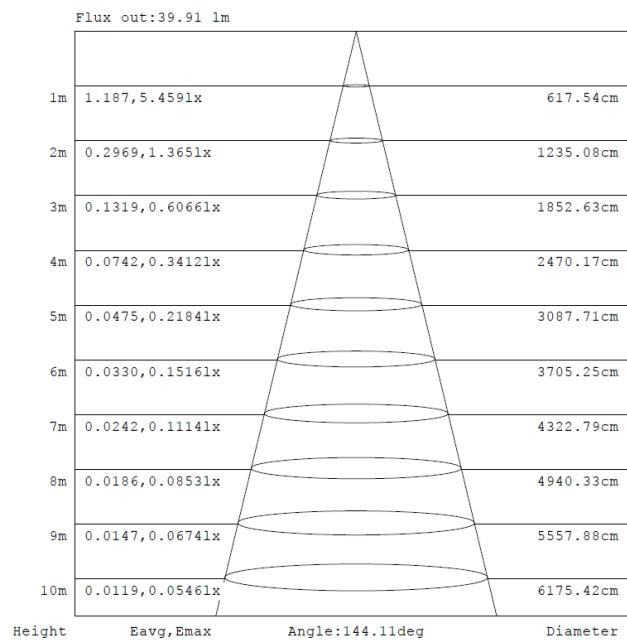
Total Beam Angle(°)
144.1

Illumination Plots

Model No.: AKPD17027XX

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.

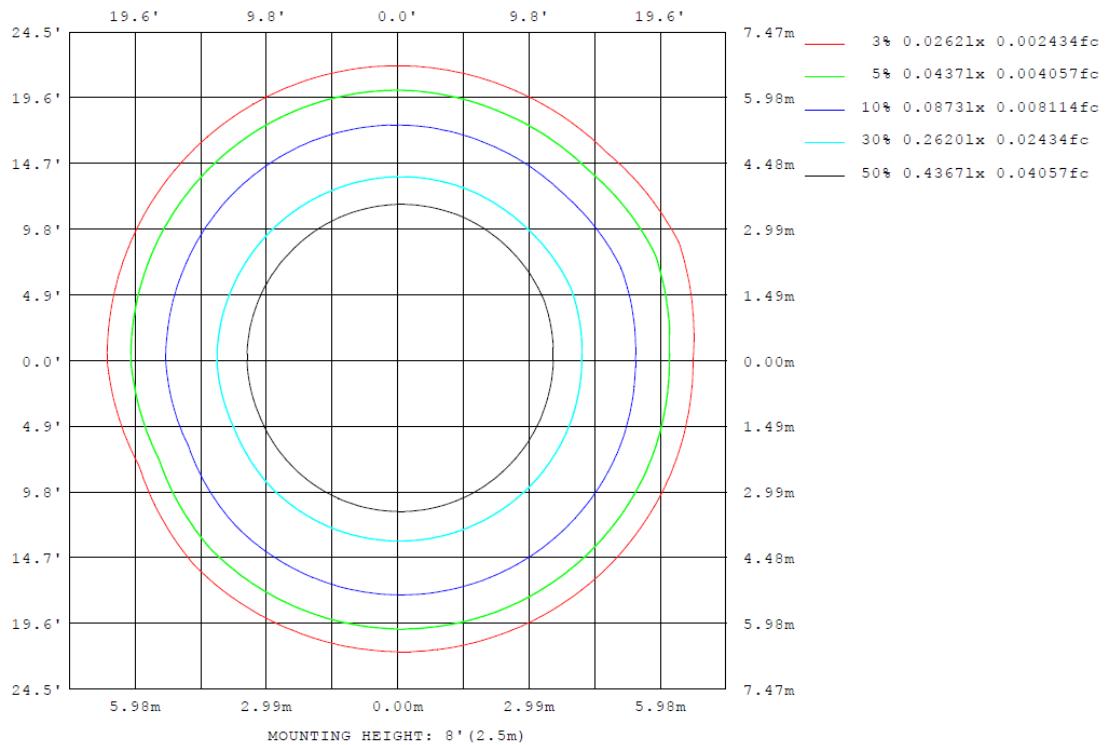
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TEST REPORT

RESULTS OF TESTS (cont'd)

Test Condition: 120V, 60Hz For AKPD17027XX

Model No.: AKPD17027XX
Mount Height: 2.5 m
Isoillumination Plot



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TEST REPORT

RESULTS OF TESTS (cont'd)

Test Condition: 120V, 60Hz For AKPD17027XX

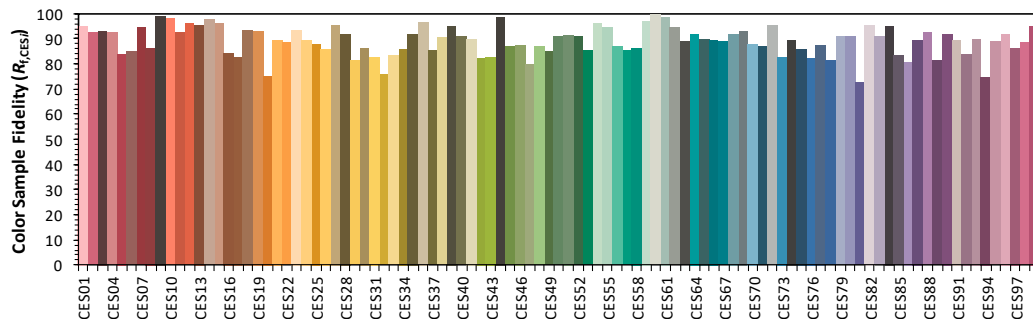
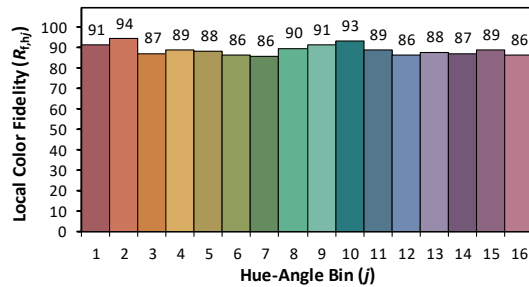
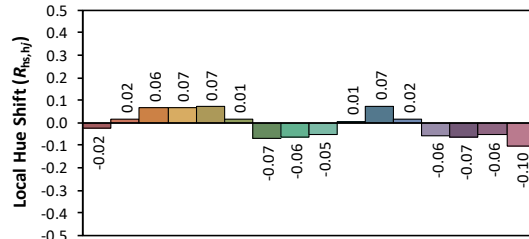
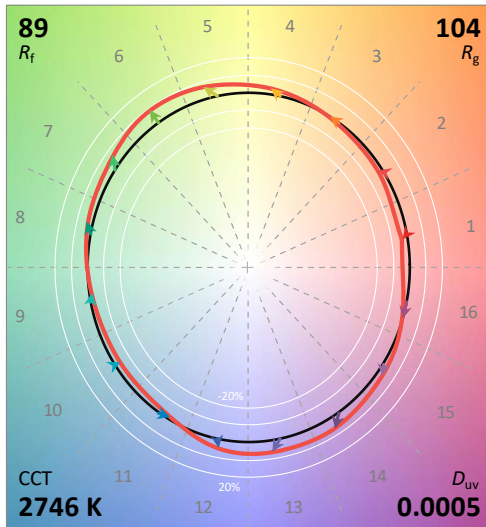
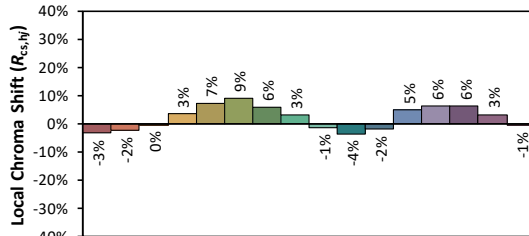
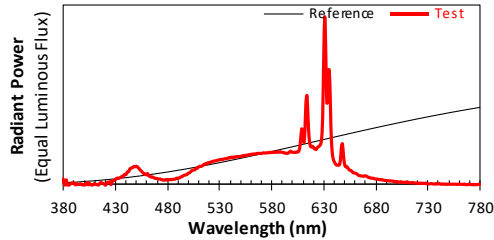
ANSI/IES TM-30-18 Color Rendition Report

Source: User SPD

Manufacturer: Visual Comfort & Co.

Date: 2024/8/6

Model: AKPD17027XX



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

x 0.4570
 y 0.4113
 u' 0.2603
 v' 0.5272

CIE 13.3-1995
(CRI)

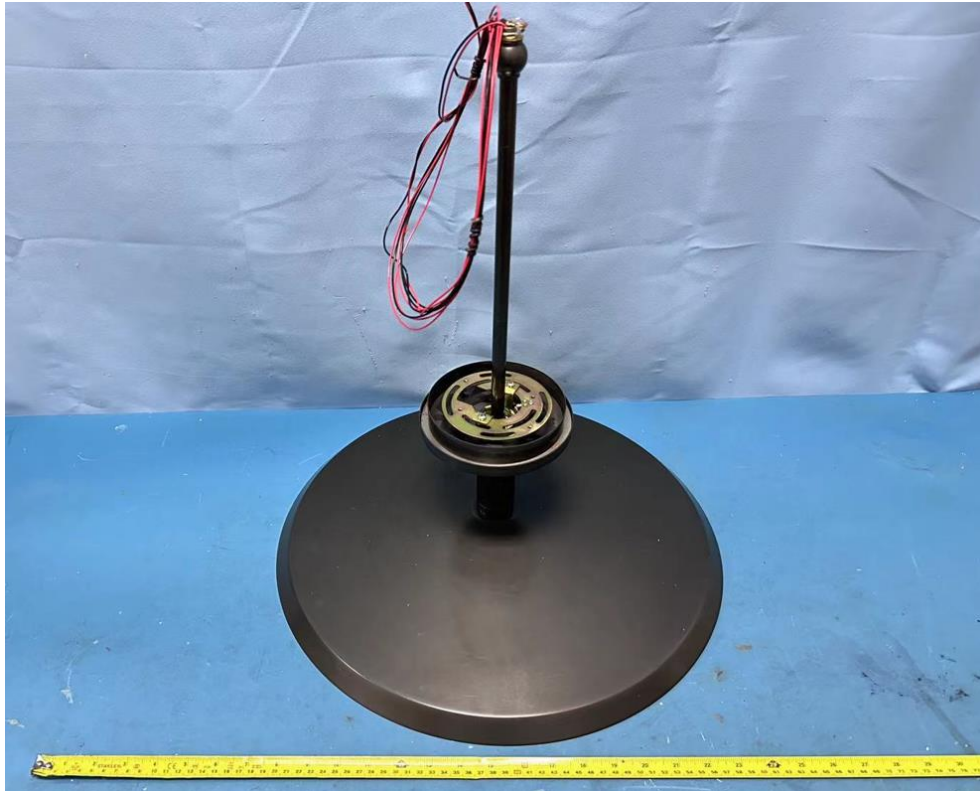
R_a 94
 R_g 74

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

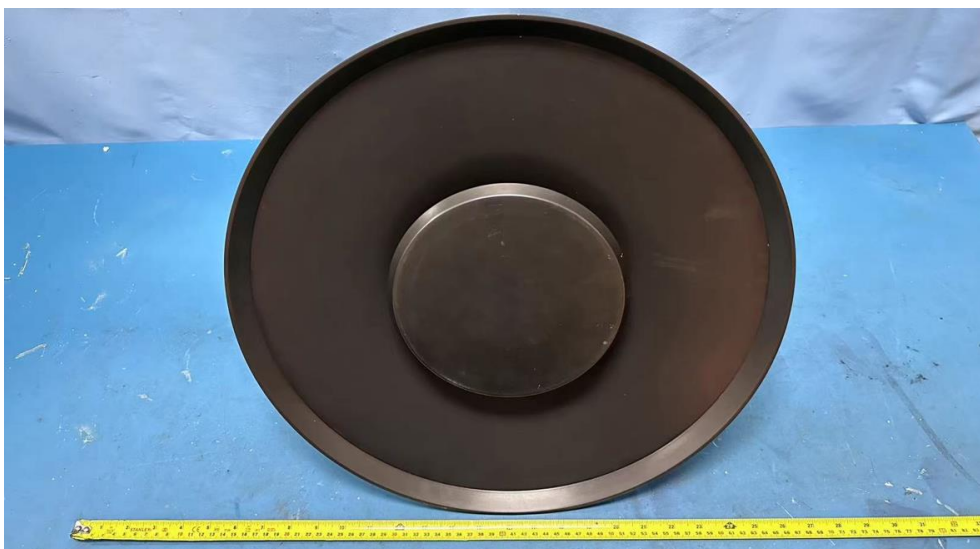
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TEST REPORT

PRODUCT PICTURE (not to scale)



External view of AKPD17027XX



External view of AKPD17027XX

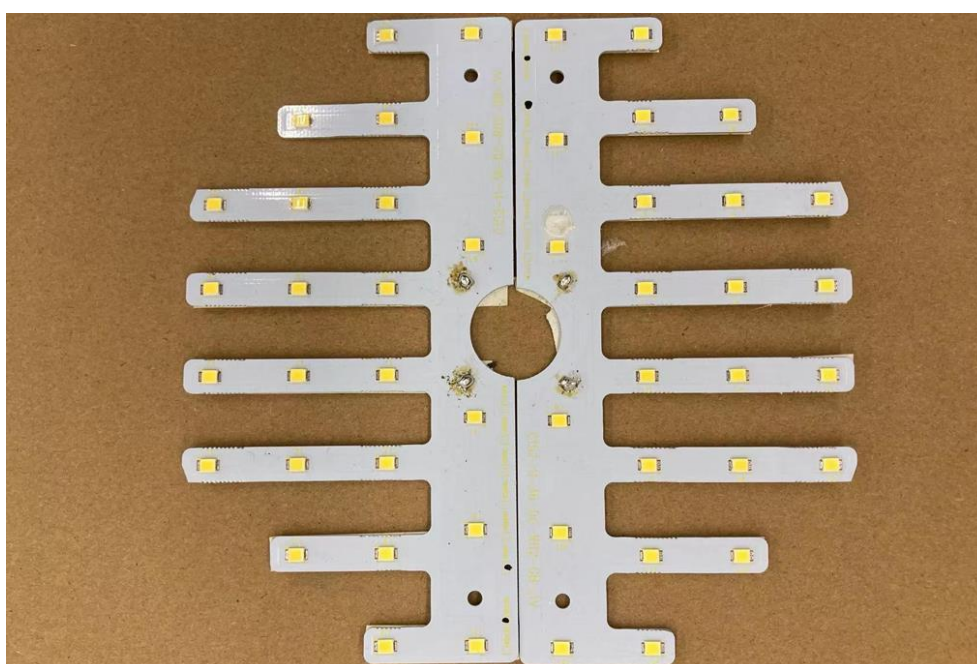
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TEST REPORT

PRODUCT PICTURE (not to scale)



View of LED driver PVD14-C040V35-UNV3-HE-P



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 *****