

Visual Comfort & Co.

TEST REPORT

SCOPE OF WORK

LM-79 testing report

REPORT NUMBER

240428155GZU-004

ISSUE DATE

12 July 2024

REVISION DATE

Modification 1: 01 November 2024

NUMBER OF PAGES

13

DOCUMENT CONTROL NUMBER

Report format for LM-79_G

© 2024 INTERTEK



Report No.: 240428155GZU-004
Modification 1: 01 November 2024

TEST REPORT

TEST OF ONE LED LUMINAIRE

MODEL NO. PBPD35027XX

Remark: "XX" denoted the appearance color.

RENDERED TO

Visual Comfort & Co.

Contact Name: Adam Same

7400 LINDER AVE. SKOKIE, IL, 60077

Email: asame@visualcomfort.com
Phone No.: 8474104402

<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: QGZ240425048
<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 PBPD35027XX. The sample was received by Intertek in undamaged condition and tested as received. The sample designation was S240428155-005.
<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>	12 June 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:	PBPD35027XX
Description:	LED Luminaries
Brand Name:	--

Test Condition: 120V, 60Hz For PBPD35027XX

Criteria	Result
Total Lumen Output	232.5 lm
Total Power	11.3 W
Luminaire Efficacy	20.6 lm/W
S/MH(C0/180)	1.10
S/MH(C90/270)	2.81
Correlated Color Temperature (CCT)	2030 K
Color Rendering Index (CRI)	87
R9	44
Chromaticity Coordinate (x)	0.5305
Chromaticity Coordinate (y)	0.4232
Chromaticity Coordinate (u')	0.3024
Chromaticity Coordinate (v')	0.5428

Remark:

Revision history:

Modification 1: Based on and superseded the previous report 240428155GZU-004 issued on 12 July 2024, Correct the applicant name on page 1 and 2 of the report.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	DS215S	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

This report is for the exclusive use of Intertek's Client and is provided pursuant to the agreement between Intertek and its Client. Intertek's responsibility and liability are limited to the terms and conditions of the agreement. Intertek assumes no liability to any party, other than to the Client in accordance with the agreement, for any loss, expense or damage occasioned by the use of this report. Only the Client is authorized to permit copying or distribution of this report and then only in its entirety. Any use of the Intertek name or one of its marks for the sale or advertisement of the tested material, product or service must first be approved in writing by Intertek. The observations and test results in this report are relevant only to the sample tested. This report by itself does not imply that the material, product, or service is or has ever been under an Intertek certification program.

When determining for test conclusion, measurement uncertainty of tests has been considered.

Throughout this report a ☐ comma ☒ point is used as the decimal separator.

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

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

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

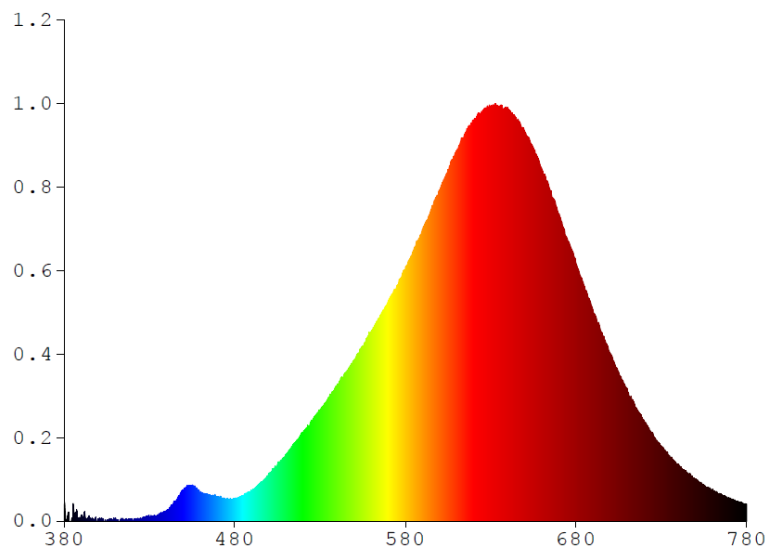
TEST REPORT

RESULTS OF TESTS

Test Condition: 120V, 60Hz For PBPD35027XX

Spectral Distribution over Visible Wavelengths

nm	mW/nm	nm	mW/nm	nm	mW/nm	nm	mW/nm	nm	mW/nm
380	0.0103	480	0.0161	580	0.1798	680	0.1827	780	0.0119
385	0.0024	485	0.0181	585	0.1932	685	0.1660		
390	0.0039	490	0.0216	590	0.2073	690	0.1493		
395	0.0003	495	0.0269	595	0.2215	695	0.1346		
400	0.0017	500	0.0336	600	0.2352	700	0.1191		
405	0.0000	505	0.0401	605	0.2497	705	0.1055		
410	0.0022	510	0.0476	610	0.2634	710	0.0929		
415	0.0001	515	0.0555	615	0.2757	715	0.0806		
420	0.0004	520	0.0622	620	0.2847	720	0.0708		
425	0.0019	525	0.0716	625	0.2905	725	0.0622		
430	0.0026	530	0.0789	630	0.2951	730	0.0532		
435	0.0042	535	0.0881	635	0.2947	735	0.0456		
440	0.0072	540	0.0972	640	0.2931	740	0.0400		
445	0.0135	545	0.1057	645	0.2858	745	0.0344		
450	0.0221	550	0.1144	650	0.2766	750	0.0297		
455	0.0254	555	0.1243	655	0.2643	755	0.0252		
460	0.0208	560	0.1348	660	0.2499	760	0.0227		
465	0.0187	565	0.1451	665	0.2349	765	0.0188		
470	0.0173	570	0.1563	670	0.2182	770	0.0163		
475	0.0158	575	0.1671	675	0.1975	775	0.0139		



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

TEST REPORT

RESULTS OF TESTS (cont'd)

Test Condition: 120V, 60Hz For PBPD35027XX

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

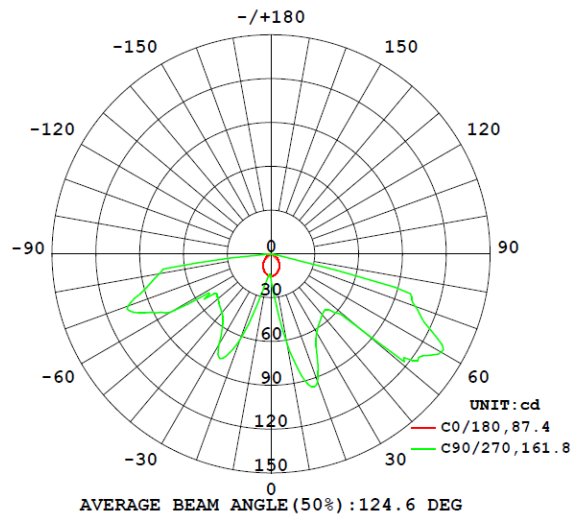
Photometric Measurements at 25°C – Distribution Method

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')
PBPD35027XX								
S2404281 55-005	base-up	2030	87	44	0.5305	0.4232	0.3024	0.5428

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)
PBPD35027XX							
S2404281 55-005	base-up	120.0	95.0	11.3	0.991	232.5	20.6

Intensity (Candlepower) Summary at 25°C - Candelas



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

TEST REPORT

RESULTS OF TESTS (cont'd)

Test Condition: 120V, 60Hz For PBPD35027XX

Intensity (Candlepower) Summary at 25°C - Candelas

V \ H(°)	0	22.5	45	67.5	90
0	3.6	3.3	3.8	4.4	4.3
5	3.6	3.3	4.9	7.1	7.4
10	3.5	3.5	7.2	13.5	14.8
15	3.3	3.8	11.3	19.3	21.5
20	3.1	4.2	14.3	20.5	22.2
25	2.9	4.6	15.2	17.4	17.6
30	2.6	5.3	13.4	14.4	14.9
35	2.3	5.4	11.6	13.1	13.8
40	2.0	5.5	10.3	12.1	13.0
45	1.7	5.6	9.6	11.9	13.0
50	1.5	5.7	14.0	20.1	19.6
55	1.2	4.4	6.4	22.7	29.5
60	0.9	3.4	12.0	25.5	32.1
65	0.6	2.2	12.6	23.2	28.4
70	0.3	2.3	12.0	20.4	25.1
75	0.2	1.2	1.7	2.3	21.0
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 PBPD35027XX

Zonal Lumen Summary and Percentages at 25°C

Zone	Lumens (lm)	% Luminaire (%)
PBPD35027XX		
0-30	35.7	15.4
0-40	63.7	27.4
0-60	134.9	58.0
0-90	232.3	99.9
60-90	97.4	41.9
0-180	232.5	100.0

Beam Angle

Total Beam Angle(°)

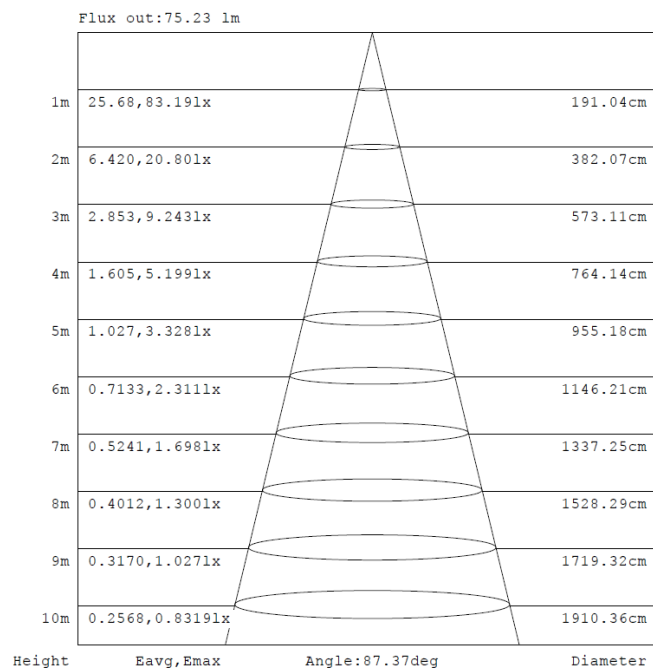
124.6

Illumination Plots

Model No.: PBPD35027XX

Mount Height: 2.5 m

Illuminance - Cone of Light



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

TEST REPORT

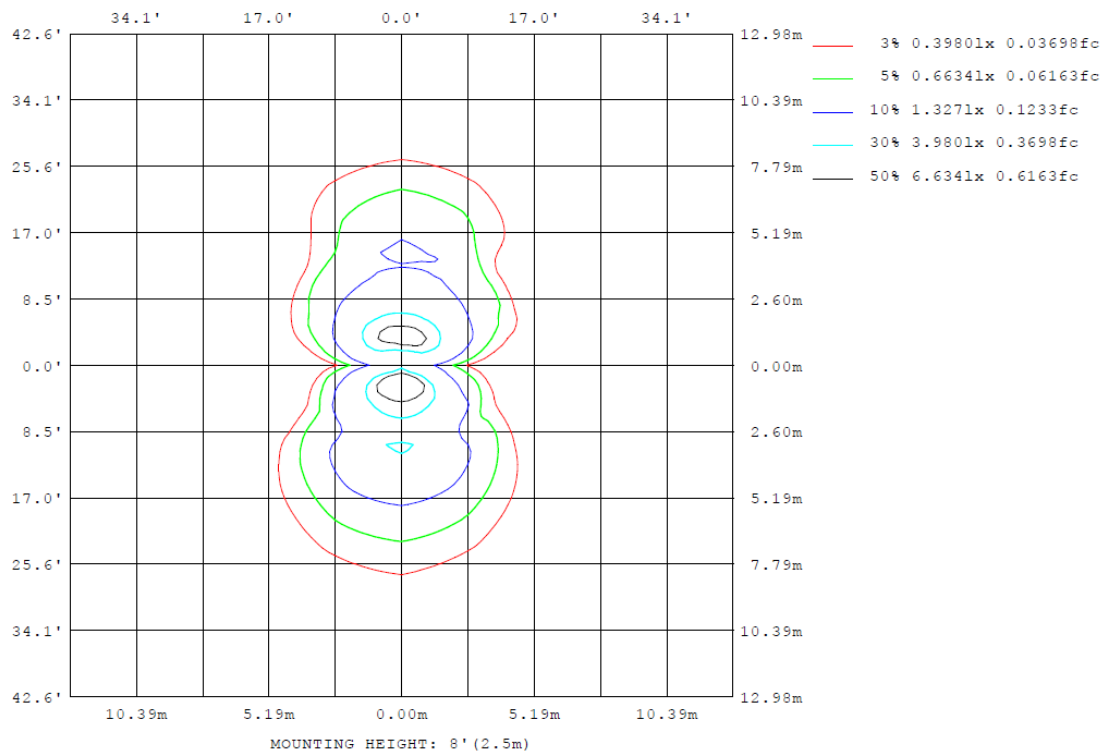
RESULTS OF TESTS (cont'd)

Test Condition: 120V, 60Hz For PBPD35027XX

Model No.: PBPD35027XX

Mount Height: 2.5 m

Isoillumination Plot



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

TEST REPORT

RESULTS OF TESTS (cont'd)

Test Condition: 120V, 60Hz For PBPD35027XX

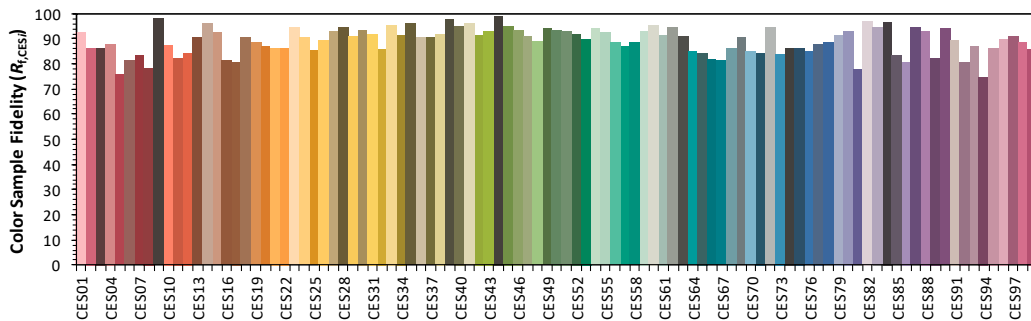
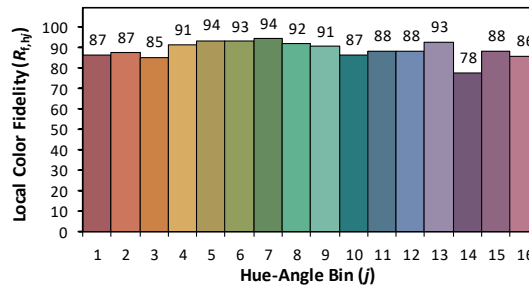
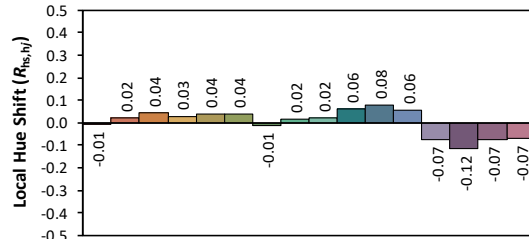
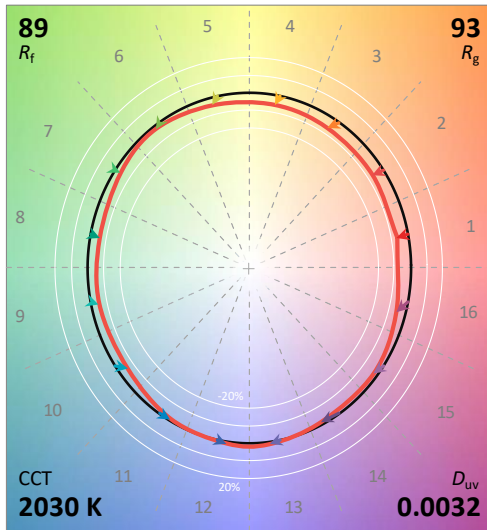
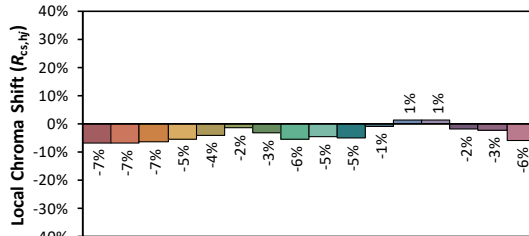
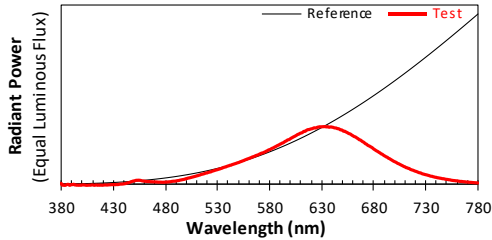
ANSI/IES +B3:X17TM-30-18 Color Rendition Report

Source: User SPD

Manufacturer: Visual Comfort and Company

Date: 2024/6/12

Model: PBPD35027xx



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

x 0.5305
 y 0.4232
 u' 0.3024
 v' 0.5428

CIE 13.3-1995
(CRI)

R_a 87

R_g 44

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

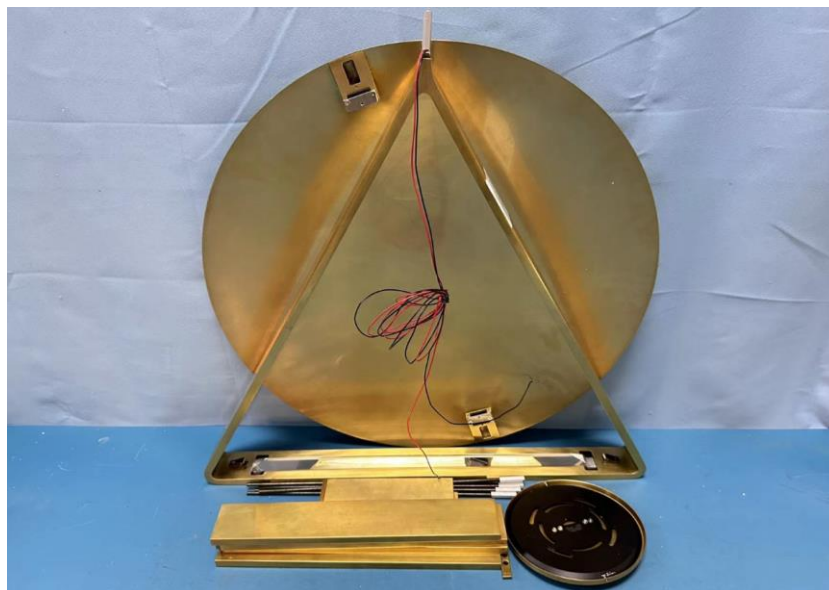
***** End of Page *****

TEST REPORT

PRODUCT PICTURE (not to scale)



External view of PBD35027XX



Explode view of PBD35027XX

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

TEST REPORT

PRODUCT PICTURE (not to scale)



View of LED driver PVD11-C030V33-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 *****