

Visual Comfort and Company

TEST REPORT

SCOPE OF WORK

LM-79 testing report

REPORT NUMBER

230707018GZU-004

ISSUE DATE

01-August-2023

REVISION DATE

None

NUMBER OF PAGES

13

DOCUMENT CONTROL NUMBER

Report format for LM-79:2008_F

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Report No.: 230707018GZU-004

TEST REPORT

TEST OF ONE LED LUMINAIRE

MODEL NO. CDPD17827**

(Remark: “**” are denoted finish color)

RENDERED TO

Visual Comfort and Company

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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: QGZ230703012.
<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 IES LM-79: 2019 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 CDPD17827**. The sample was received in undamaged condition. The sample designation was S230707018-004.
<u>DATES OF TESTS:</u>	19-July-2023
<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 Science City, Guangzhou, Guangdong, China

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TEST REPORT

SUMMARY

Model Number:	CDPD17827**
Description:	LED Luminaries
Brand Name:	--

Test Condition: 120V, 60Hz For CDPD17827**

Criteria	Result
Total Lumen Output	957.3 lm
Total Power	27.0 W
Luminaire Efficacy	35.5 lm/W
S/MH(C0/180)	0.94
S/MH(C90/270)	0.79
Correlated Color Temperature (CCT)	2745 K
Color Rendering Index (CRI)	93
R9	71
Chromaticity Coordinate (x)	0.4586
Chromaticity Coordinate (y)	0.4141
Chromaticity Coordinate (u')	0.2601
Chromaticity Coordinate (v')	0.5285

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 DC

Standard lamp used for integrating sphere:

Model: D204

Current: 3.9480A DC

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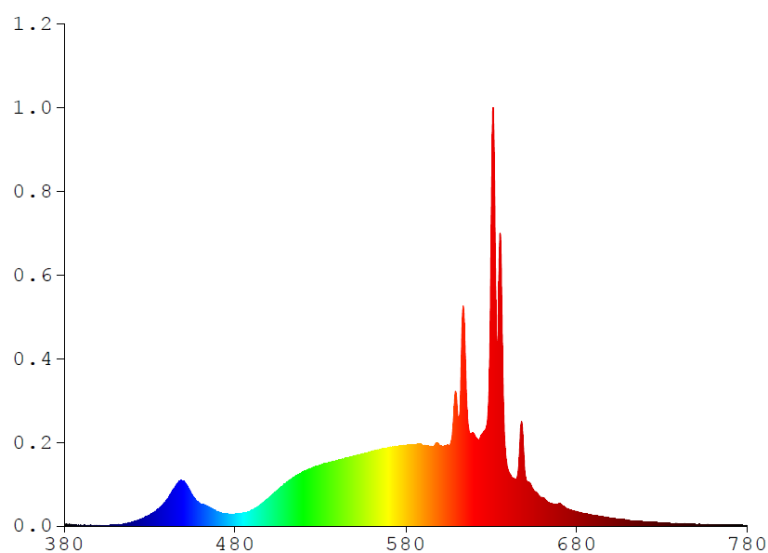
TEST REPORT

RESULTS OF TESTS

Test Condition: 120V, 60Hz For CDPD17827**

Spectral Distribution over Visible Wavelengths

nm	mW/nm	nm	mW/nm	nm	mW/nm	nm	mW/nm	nm	mW/nm
380	0.1963	480	1.0474	580	7.0554	680	1.2565	780	0.0324
385	0.1004	485	1.1437	585	7.1464	685	1.0787		
390	0.0397	490	1.4006	590	7.0508	690	0.9446		
395	0.0393	495	1.8844	595	6.9698	695	0.8246		
400	0.0510	500	2.4988	600	7.0338	700	0.7094		
405	0.0663	505	3.1569	605	7.0759	705	0.6112		
410	0.1087	510	3.7809	610	10.2040	710	0.5265		
415	0.1935	515	4.3142	615	13.4270	715	0.4531		
420	0.3521	520	4.7498	620	8.0443	720	0.3993		
425	0.6025	525	5.0789	625	8.1354	725	0.3444		
430	0.9796	530	5.3378	630	27.8880	730	0.2906		
435	1.5020	535	5.5613	635	25.4210	735	0.2575		
440	2.3029	540	5.7329	640	4.8059	740	0.2195		
445	3.4639	545	5.9458	645	4.2218	745	0.1938		
450	3.9217	550	6.1320	650	4.3418	750	0.1644		
455	2.6782	555	6.3305	655	3.0717	755	0.1426		
460	1.9371	560	6.5409	660	2.5036	760	0.1252		
465	1.6589	565	6.6819	665	1.9702	765	0.1085		
470	1.2487	570	6.8454	670	1.9867	770	0.1011		
475	1.0524	575	6.9655	675	1.4183	775	0.0841		



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TEST REPORT

RESULTS OF TESTS (cont'd)

Test Condition: 120V, 60Hz For CDPD17827**

Total operation burning time: 60 minutes

Stabilization time: 45 minutes

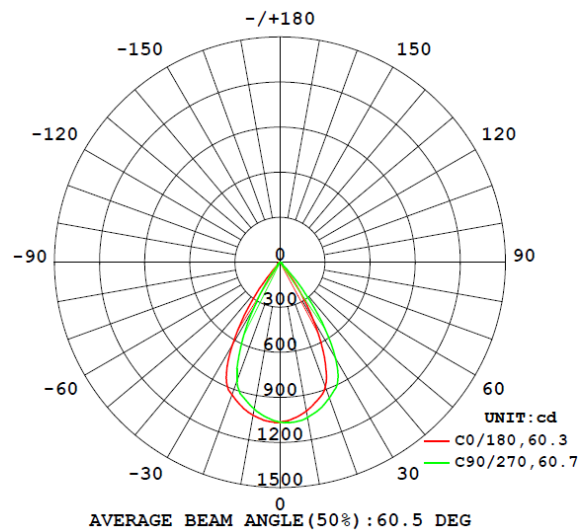
Photometric Measurements at 25°C –Distribution Method

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')
CDPD17827**								
S2307070 18-004	--	2745	93	71	0.4586	0.4141	0.2601	0.5285

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)
CDPD17827**							
S2307070 18-004	--	120.2	225.9	27.0	0.994	957.3	35.5

Intensity (Candlepower) Summary at 25°C – Candelas



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TEST REPORT

RESULTS OF TESTS (cont'd)

Test Condition: 120V, 60Hz For CDPD17827**

Intensity (Candlepower) Summary at 25°C - Candelas

V \ H(°)	0	22.5	45	67.5	90
0	1063.3	1063.3	1063.7	1063.3	1064.0
5	1043.0	1050.8	1057.9	1064.2	1068.5
10	1005.7	1017.9	1030.1	1040.0	1049.1
15	953.4	969.3	986.2	1000.8	1012.2
20	882.8	912.1	931.1	946.7	960.8
25	700.9	768.8	829.0	873.7	899.0
30	443.7	525.2	613.5	687.2	737.5
35	196.1	265.2	348.5	430.2	486.0
40	48.2	72.2	121.5	181.6	227.2
45	24.2	26.4	28.3	43.7	58.2
50	19.1	20.5	21.8	22.9	23.6
55	15.4	16.5	17.3	17.8	18.0
60	10.8	12.8	13.8	14.2	14.3
65	5.3	6.7	8.4	9.7	10.5
70	2.2	3.0	3.9	4.7	5.3
75	0.6	1.1	1.6	2.1	2.3
80	0.0	0.0	0.3	0.6	0.8
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	0.1	0.1	0.1	0.1	0.1
125	0.2	0.2	0.2	0.2	0.1
130	0.4	0.3	0.3	0.3	0.3
135	0.5	0.5	0.5	0.4	0.4
140	0.7	0.6	0.6	0.6	0.6
145	0.8	0.8	0.8	0.8	0.7
150	1.0	0.9	0.9	0.9	0.9
155	1.1	1.1	1.1	1.0	1.0
160	1.2	1.2	1.2	1.1	1.1
165	1.2	1.2	1.2	1.2	1.2
170	1.2	1.2	1.2	1.2	1.2
175	1.1	1.2	1.2	1.2	1.2
180	1.1	1.1	1.1	1.1	1.1

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

TEST REPORT

RESULTS OF TESTS (cont'd)

Test Condition: 120V, 60Hz For CDPD17827**

Zonal Lumen Summary and Percentages at 25°C

Zone	Lumens (lm)	% Luminaire (%)
CDPD17827**		
0-30	716.2	74.8
0-40	902.0	94.2
0-60	947.7	99.0
0-90	955.8	99.9
60-90	8.1	0.9
0-180	957.3	100.0

Beam Angle

Total Beam Angle (°)

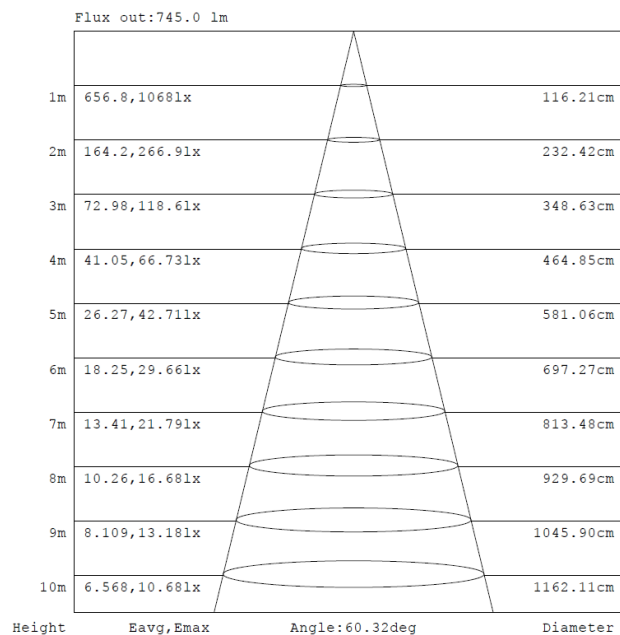
60.5

Illumination Plots

Model No.: CDPD17827**

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

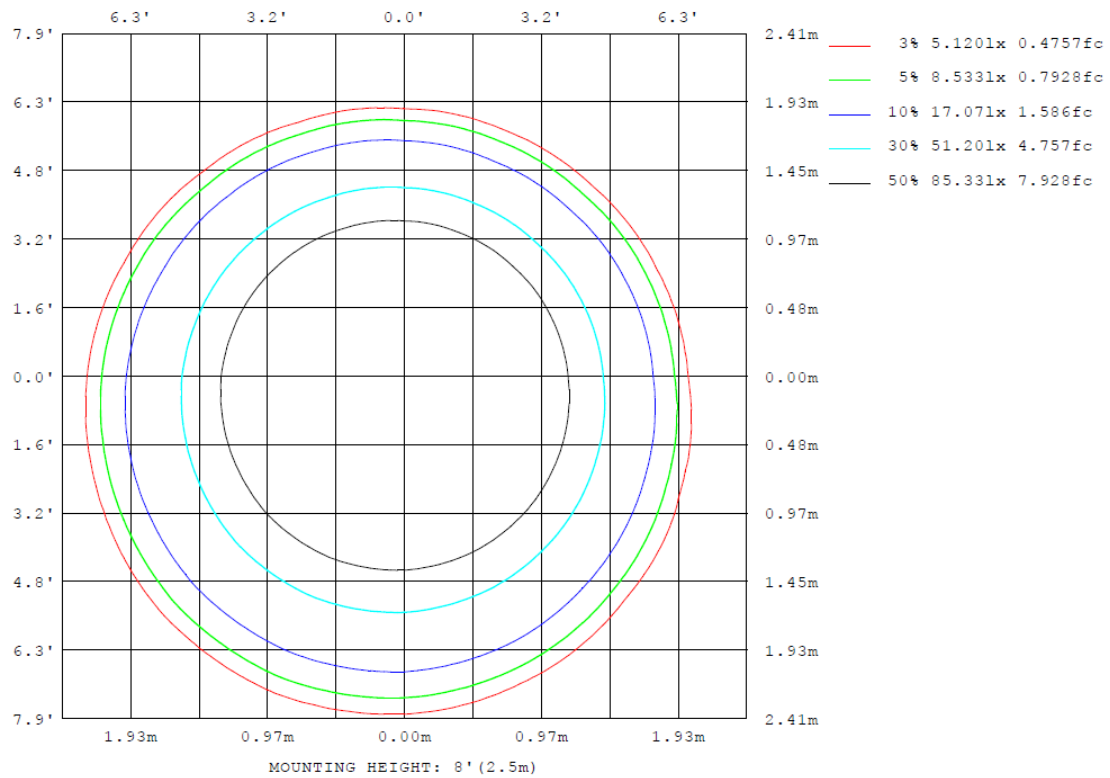
RESULTS OF TESTS (cont'd)

Test Condition: 120V, 60Hz For CDPD17827**

Model No.: CDPD17827**

Mount Height: 2.5 m

Isoillumination Plot



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TEST REPORT

RESULTS OF TESTS (cont'd)

Test Condition: 120V, 60Hz For CDPD17827**

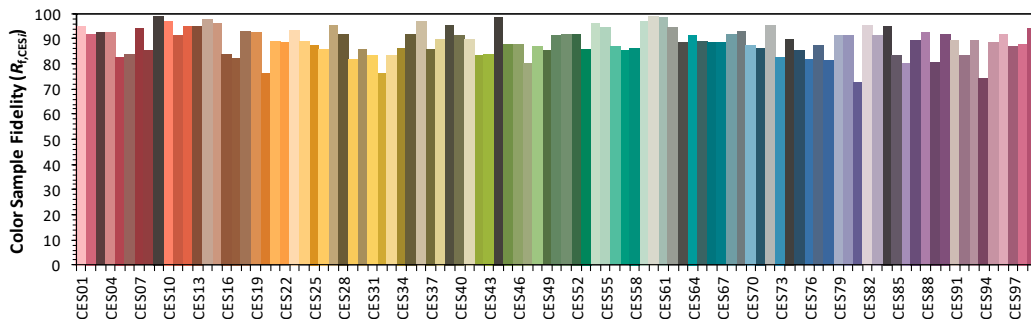
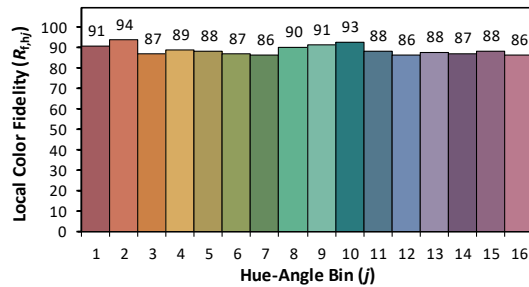
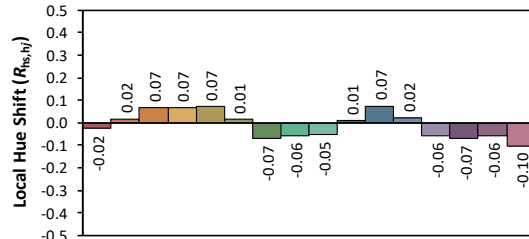
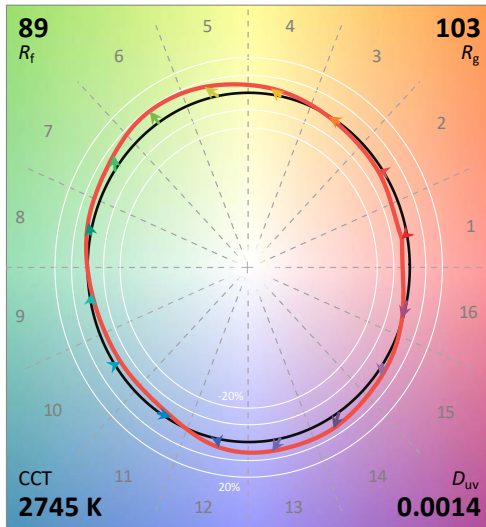
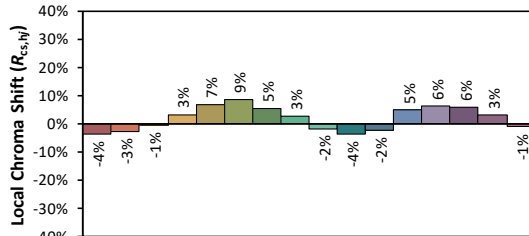
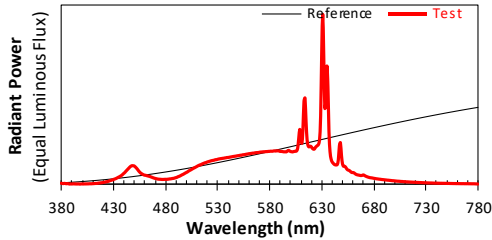
ANSI/IES TM-30-18 Color Rendition Report

Source: User SPD

Manufacturer: Visual Comfort and Company

Date: 2023/7/19

Model: CDPD17827



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

x 0.4586
 y 0.4141
 u' 0.2601
 v' 0.5285

CIE 13.3-1995
(CRI)

R_a 93

R_g 71

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 LED luminaire CDPD17827**

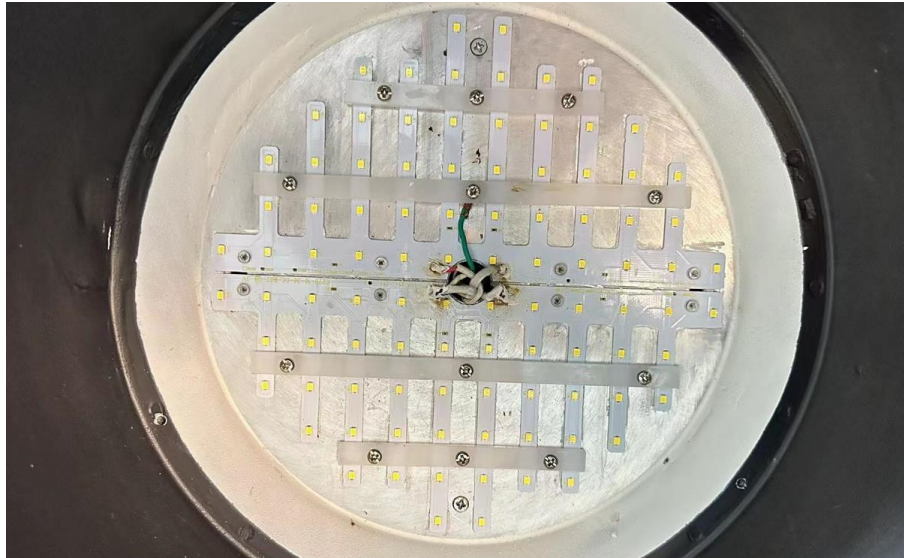


External view of LED luminaire CDPD17827**

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TEST REPORT

PRODUCT PICTURE (not to scale)



View of LED board



View of LED driver PVD27-C070V38-UNV3-HE-P

In Charge Of Tests:

Done Ye

Done Ye
Engineer

Report Reviewed By

Shelley Ying

Shelley Ying
Reviewer

Attachment: None

***** End of Report *****