

Visual Comfort and Company

TEST REPORT

SCOPE OF WORK

LM-79 testing report

REPORT NUMBER

230707018GZU-003

ISSUE DATE

01-August-2023

REVISION DATE

None

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13

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Report No.: 230707018GZU-003

TEST REPORT

TEST OF ONE LED LUMINAIRE

MODEL NO. CDPD17727**

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

RENDERED TO

Visual Comfort and Company

Contact Name: Tess Gallagher

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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 CDPD17727**. The sample was received in undamaged condition. The sample designation was S230707018-003.
<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:	CDPD17727**
Description:	LED Luminaries
Brand Name:	--

Test Condition: 120V, 60Hz For CDPD17727**

Criteria	Result
Total Lumen Output	942.7 lm
Total Power	27.6 W
Luminaire Efficacy	34.1 lm/W
S/MH(C0/180)	0.96
S/MH(C90/270)	0.90
Correlated Color Temperature (CCT)	2732 K
Color Rendering Index (CRI)	93
R9	71
Chromaticity Coordinate (x)	0.4594
Chromaticity Coordinate (y)	0.4140
Chromaticity Coordinate (u')	0.2607
Chromaticity Coordinate (v')	0.5286

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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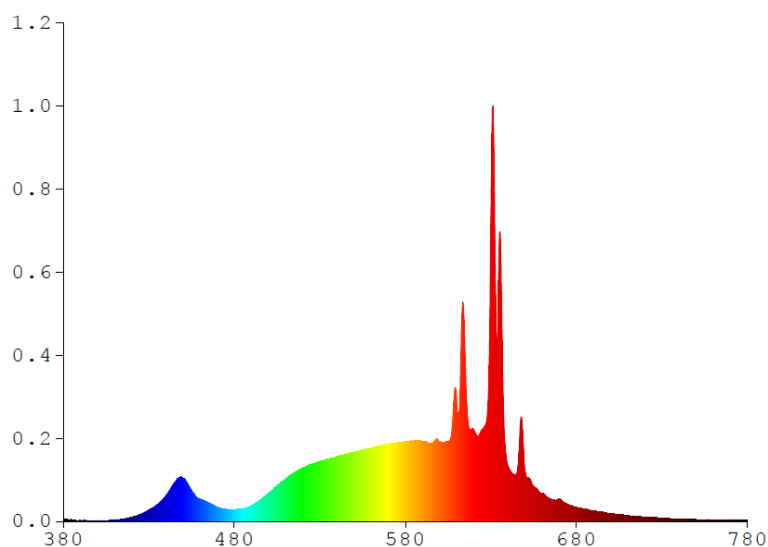
TEST REPORT

RESULTS OF TESTS

Test Condition: 120V, 60Hz For CDPD17727**

Spectral Distribution over Visible Wavelengths

nm	mW/nm	nm	mW/nm	nm	mW/nm	nm	mW/nm	nm	mW/nm
380	0.1580	480	0.9997	580	6.7406	680	1.1925	780	0.1277
385	0.0450	485	1.0868	585	6.8396	685	1.0331		
390	0.0829	490	1.3381	590	6.7749	690	0.9033		
395	0.0361	495	1.8018	595	6.6557	695	0.7695		
400	0.0434	500	2.3748	600	6.7503	700	0.6719		
405	0.0571	505	3.0371	605	6.7843	705	0.5705		
410	0.1032	510	3.6106	610	9.8579	710	0.5016		
415	0.1957	515	4.1375	615	12.9940	715	0.4325		
420	0.3475	520	4.5280	620	7.7555	720	0.3782		
425	0.5902	525	4.8373	625	7.8463	725	0.3148		
430	0.9412	530	5.0800	630	26.6820	730	0.2728		
435	1.4294	535	5.2998	635	24.3870	735	0.2414		
440	2.1873	540	5.5063	640	4.6317	740	0.2022		
445	3.2713	545	5.6777	645	4.0506	745	0.1833		
450	3.6863	550	5.8633	650	4.1672	750	0.1547		
455	2.5840	555	6.0511	655	2.9614	755	0.1369		
460	1.8664	560	6.2266	660	2.3987	760	0.1183		
465	1.5689	565	6.4190	665	1.8840	765	0.1024		
470	1.2058	570	6.5582	670	1.9080	770	0.0973		
475	1.0291	575	6.6511	675	1.3659	775	0.0816		



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TEST REPORT

RESULTS OF TESTS (cont'd)

Test Condition: 120V, 60Hz For CDPD17727**

Total operation burning time: 60 minutes

Stabilization time: 45 minutes

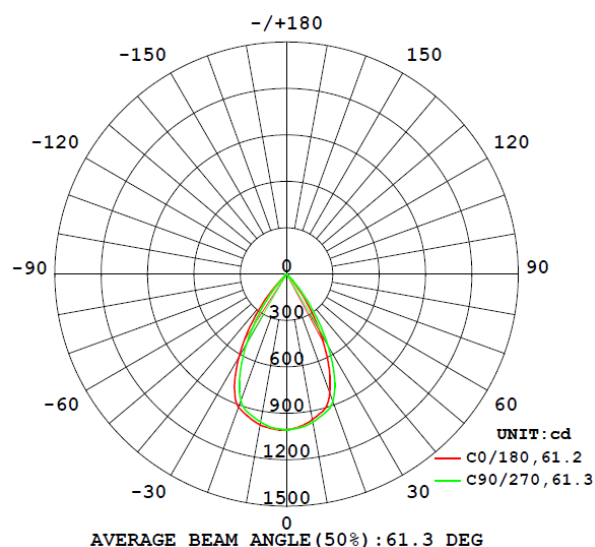
Photometric Measurements at 25°C – Distribution Method

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')
CDPD17727**								
S2307070 18-003	--	2732	93	71	0.4594	0.4140	0.2607	0.5286

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)
CDPD17727**							
S2307070 18-003	--	120.2	231.0	27.6	0.995	942.7	34.1

Intensity (Candlepower) Summary at 25°C – Candelas



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TEST REPORT

RESULTS OF TESTS (cont'd)

Test Condition: 120V, 60Hz For CDPD17727**

Intensity (Candlepower) Summary at 25°C - Candelas

V \ H(°)	0	22.5	45	67.5	90
0	1004.1	1003.9	1003.9	1005.2	1003.6
5	989.2	989.7	991.3	994.6	996.1
10	955.1	956.4	960.0	966.1	971.9
15	914.6	916.2	920.3	927.6	934.0
20	819.1	825.6	839.7	858.1	876.5
25	641.8	653.2	677.5	705.9	733.0
30	436.6	448.2	471.8	504.5	537.5
35	242.2	251.4	270.1	300.6	334.3
40	82.5	89.5	104.5	125.0	150.1
45	18.7	18.6	20.8	26.6	38.8
50	12.6	12.6	13.2	14.5	15.8
55	9.0	8.9	9.1	9.6	10.2
60	6.4	6.3	6.3	6.5	6.9
65	3.3	3.3	3.4	3.6	3.9
70	1.5	1.6	1.6	1.7	1.9
75	0.6	0.6	0.7	0.8	0.9
80	0.1	0.1	0.1	0.2	0.3
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	0.1	0.1	0.1	0.0	0.0
120	0.1	0.1	0.1	0.1	0.1
125	0.2	0.2	0.2	0.2	0.2
130	0.4	0.4	0.4	0.4	0.3
135	0.5	0.5	0.5	0.5	0.5
140	0.7	0.7	0.7	0.7	0.7
145	0.8	0.8	0.9	0.8	0.8
150	1.0	1.0	1.0	1.0	1.0
155	1.1	1.1	1.1	1.1	1.1
160	1.2	1.2	1.2	1.2	1.2
165	1.2	1.2	1.2	1.3	1.2
170	1.2	1.2	1.2	1.2	1.2
175	1.1	1.1	1.1	1.1	1.1
180	1.0	1.0	1.0	1.0	1.1

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

TEST REPORT

RESULTS OF TESTS (cont'd)

Test Condition: 120V, 60Hz For CDPD17727**

Zonal Lumen Summary and Percentages at 25°C

Zone	Lumens (lm)	% Luminaire (%)
CDPD17727**		
0-30	683.4	72.5
0-40	885.6	93.9
0-60	935.5	99.2
0-90	941.2	99.8
60-90	5.7	0.6
0-180	942.7	100.0

Beam Angle

Total Beam Angle (°)

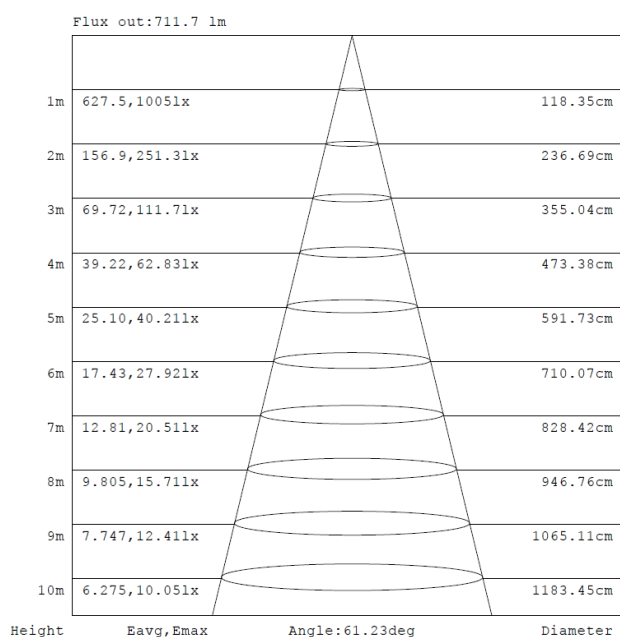
61.3

Illumination Plots

Model No.: CDPD17727**

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

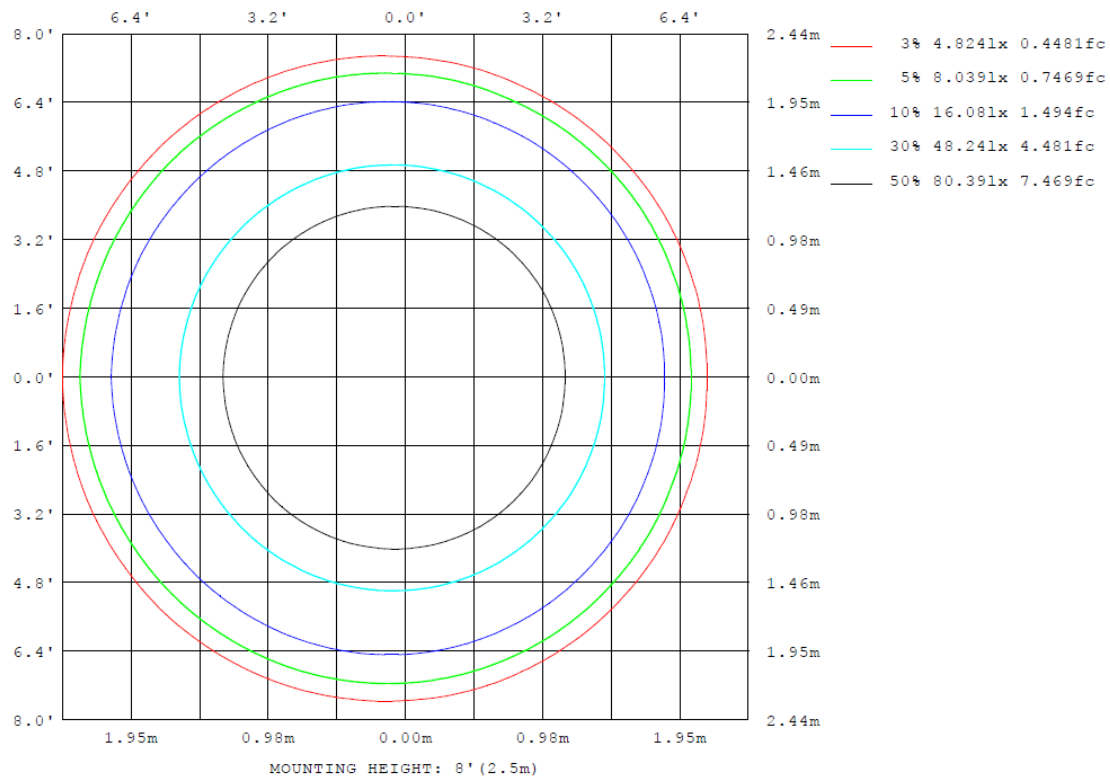
RESULTS OF TESTS (cont'd)

Test Condition: 120V, 60Hz For CDPD17727**

Model No.: CDPD17727**

Mount Height: 2.5 m

Isoillumination Plot



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TEST REPORT

RESULTS OF TESTS (cont'd)

Test Condition: 120V, 60Hz For CDPD17727**

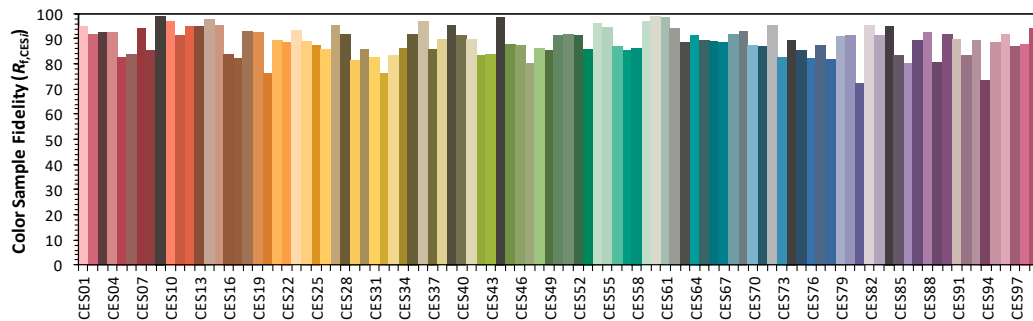
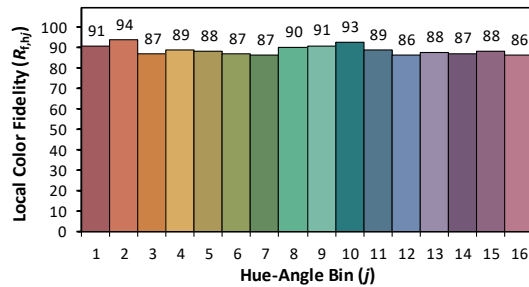
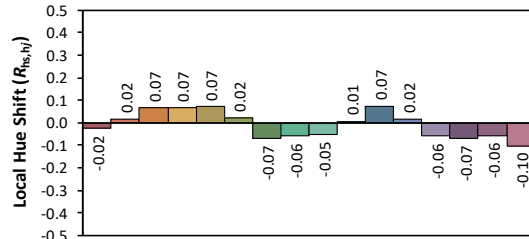
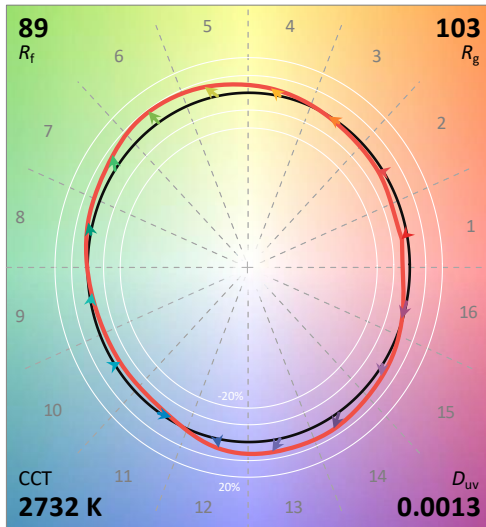
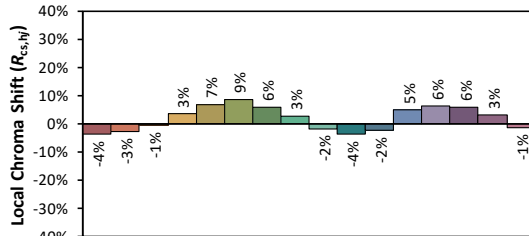
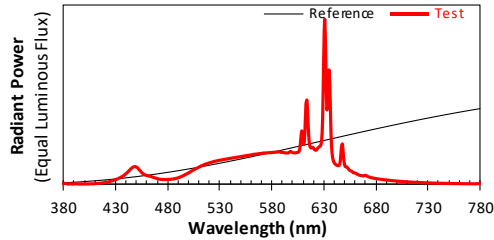
ANSI/IES TM-30-18 Color Rendition Report

Source: User SPD

Manufacturer: Visual Comfort and Company

Date: 2023/7/19

Model: CDPD17727**



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

x 0.4594
 y 0.4140
 u' 0.2607
 v' 0.5286

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.

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TEST REPORT

PRODUCT PICTURE (not to scale)



External view of LED luminaire CDPD17727**

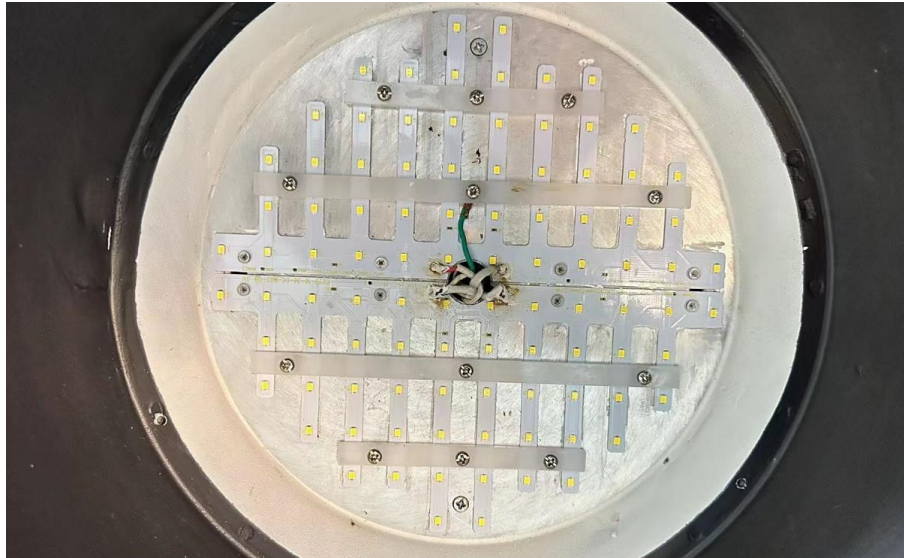


External view of LED luminaire CDPD17727**

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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 *****