

Visual Comfort & Co.

TEST REPORT

SCOPE OF WORK

LM-79 testing report

REPORT NUMBER

241111186GZU-005

ISSUE DATE

05 December 2024

REVISION DATE

None

NUMBER OF PAGES

12

DOCUMENT CONTROL NUMBER

Report format for LM-79_G

© 2024 INTERTEK



Report No.: 241111186GZU-005

TEST REPORT

TEST OF ONE LED LUMINAIRE

MODEL NO. KWWS71027XXXALB

Remark: "XXX" are denoted appearance color.

RENDERED TO

Visual Comfort & Co.

Contact Name: Javan Rivero

7400 LINDER AVE. SKOKIE, IL, 60077

Email: jrivero@visualcomfort.com

Phone No.: 847-410-4552

<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: QGZ241106002.
<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 KWWS71027XXXALB. The sample was received by Intertek in undamaged condition and tested as received. The sample designation was S241111186-007.
<u>MANUFACTURER /FACTORY & ADDRESS:</u>	Union Star Collection-Dongguan Denghuang HomeFurnishing Co., Ltd. No.5, Central Road, Yayuan Industrial Zone, Nancheng District, Dongguan City, Guangdong Province, 523000
<u>DATES OF TESTS:</u>	22 November 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:	KWWS71027XXXALB
Description:	LED Luminaries
Brand Name:	--

Test Condition: 120V, 60Hz For KWWS71027XXXALB

Criteria	Result
Total Lumen Output	379.0 lm
Total Power	15.1 W
Luminaire Efficacy	25.2 lm/W
S/MH(C0/180)	1.20
S/MH(C90/270)	2.05
Correlated Color Temperature (CCT)	2409 K
Color Rendering Index (CRI)	92
R9	57
Chromaticity Coordinate (x)	0.4849
Chromaticity Coordinate (y)	0.4139
Chromaticity Coordinate (u')	0.2772
Chromaticity Coordinate (v')	0.5324

Remark:

N/A

***** 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

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 *****

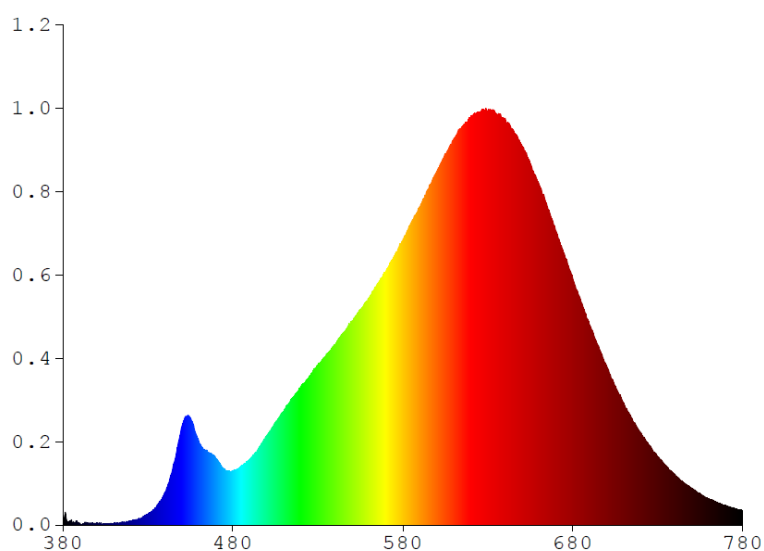
TEST REPORT

RESULTS OF TESTS

Test Condition: 120V, 60Hz For KWWS71027XXXALB

Spectral Distribution over Visible Wavelengths

nm	mW/nm	nm	mW/nm	nm	mW/nm	nm	mW/nm	nm	mW/nm
380	0.2590	480	1.4609	580	7.6980	680	6.6125	780	0.3976
385	0.1313	485	1.6028	585	8.1676	685	5.9949		
390	0.0441	490	1.7772	590	8.6051	690	5.3776		
395	0.0000	495	2.0605	595	9.0807	695	4.8311		
400	0.0323	500	2.4154	600	9.5463	700	4.2605		
405	0.0285	505	2.7676	605	10.0170	705	3.7374		
410	0.0399	510	3.0814	610	10.4370	710	3.2629		
415	0.0819	515	3.4285	615	10.7530	715	2.8440		
420	0.0974	520	3.7357	620	10.9900	720	2.4869		
425	0.1712	525	4.0281	625	11.1400	725	2.1507		
430	0.2911	530	4.3250	630	11.1700	730	1.8479		
435	0.4909	535	4.6110	635	11.0860	735	1.5863		
440	0.8767	540	4.8616	640	10.9720	740	1.3568		
445	1.6205	545	5.1996	645	10.6500	745	1.1593		
450	2.6508	550	5.4989	650	10.2390	750	0.9908		
455	2.8771	555	5.7956	655	9.7343	755	0.8369		
460	2.2370	560	6.1144	660	9.2076	760	0.7019		
465	1.9770	565	6.5094	665	8.5853	765	0.6045		
470	1.7861	570	6.8456	670	7.9285	770	0.5194		
475	1.5068	575	7.2663	675	7.1627	775	0.4490		



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

TEST REPORT

RESULTS OF TESTS (cont'd)

Test Condition: 120V, 60Hz For KWWS71027XXXALB

Total operation burning time: 60 minutes

Stabilization time: 30 minutes

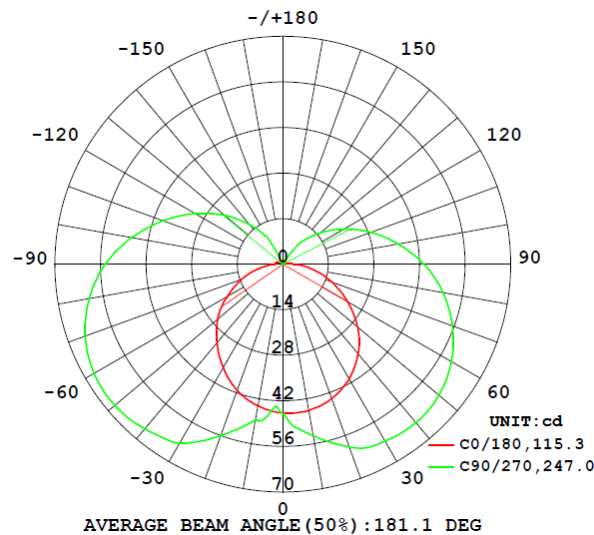
Photometric Measurements at 25°C – Distribution Method

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')
KWWS71027XXXALB								
S2411111 86-007	base-up	2409	92	57	0.4849	0.4139	0.2772	0.5324

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	Lumen Efficacy
						Flux (Lumens)	(Lumens Per Watt)
KWWS71027XXXALB							
S2411111 86-007	base-up	120.0	127.0	15.1	0.987	379.0	25.2

Intensity (Candlepower) Summary at 25°C - Candelas



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

TEST REPORT

RESULTS OF TESTS (cont'd)

Test Condition: 120V, 60Hz For KWWS71027XXXALB

Intensity (Candlepower) Summary at 25°C - Candelas

V \ H(°)	0	22.5	45	67.5	90
0	45.7	43.7	45.0	45.6	45.8
5	45.9	44.5	47.4	50.1	50.6
10	45.6	44.6	50.0	52.4	53.5
15	45.0	45.5	51.2	55.0	56.6
20	43.9	46.0	52.3	57.5	59.7
25	42.5	45.0	53.2	59.8	62.1
30	40.7	43.7	53.8	60.7	62.8
35	38.5	42.2	54.0	60.7	63.3
40	36.0	40.4	52.9	60.5	63.5
45	33.2	38.4	51.4	60.0	63.4
50	30.0	36.4	49.7	59.1	62.6
55	26.5	34.0	47.9	57.8	61.4
60	22.9	31.0	45.8	56.0	59.8
65	19.4	27.8	43.5	53.9	57.8
70	16.0	24.8	41.0	51.6	55.4
75	12.7	21.9	38.3	48.9	52.8
80	9.4	19.1	35.5	46.0	49.9
85	6.4	16.4	32.5	42.9	46.7
90	3.7	13.8	29.4	39.5	43.3
95	2.2	11.5	26.2	36.0	39.6
100	1.5	9.5	23.2	32.4	36.0
105	1.3	7.6	20.2	29.0	32.4
110	1.2	6.1	17.4	25.6	28.8
115	1.1	4.0	14.7	22.2	25.2
120	1.0	1.0	12.2	19.0	21.8
125	0.9	0.8	9.9	15.9	18.4
130	0.8	0.6	7.8	12.8	15.1
135	0.7	0.5	2.8	10.2	12.0
140	0.6	0.5	0.4	7.6	9.2
145	0.5	0.4	0.3	0.3	3.5
150	0.4	0.3	0.2	0.1	0.1
155	0.3	0.2	0.2	0.1	0.1
160	0.3	0.2	0.1	0.1	0.1
165	0.2	0.1	0.1	0.1	0.1
170	0.1	0.1	0.1	0.1	0.1
175	0.1	0.1	0.1	0.1	0.1
180	0.1	0.1	0.1	0.1	0.1

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

TEST REPORT

RESULTS OF TESTS (cont'd)

Test Condition: 120V, 60Hz For KWWS71027XXXALB

Zonal Lumen Summary and Percentages at 25°C

Zone	Lumens (lm)	% Luminaire (%)
KWWS71027XXXALB		
0-30	43.0	11.3
0-40	76.4	20.2
0-60	160.6	42.4
0-90	285.7	75.4
60-90	125.1	33.0
0-180	379.0	100.0

Beam Angle

Total Beam Angle(°)

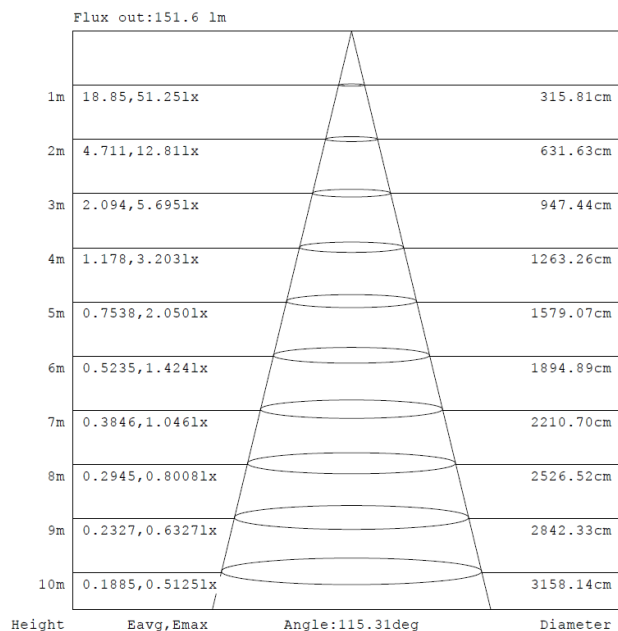
181.1

Illumination Plots

Model No.: KWWS71027XXXALB

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.

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

TEST REPORT

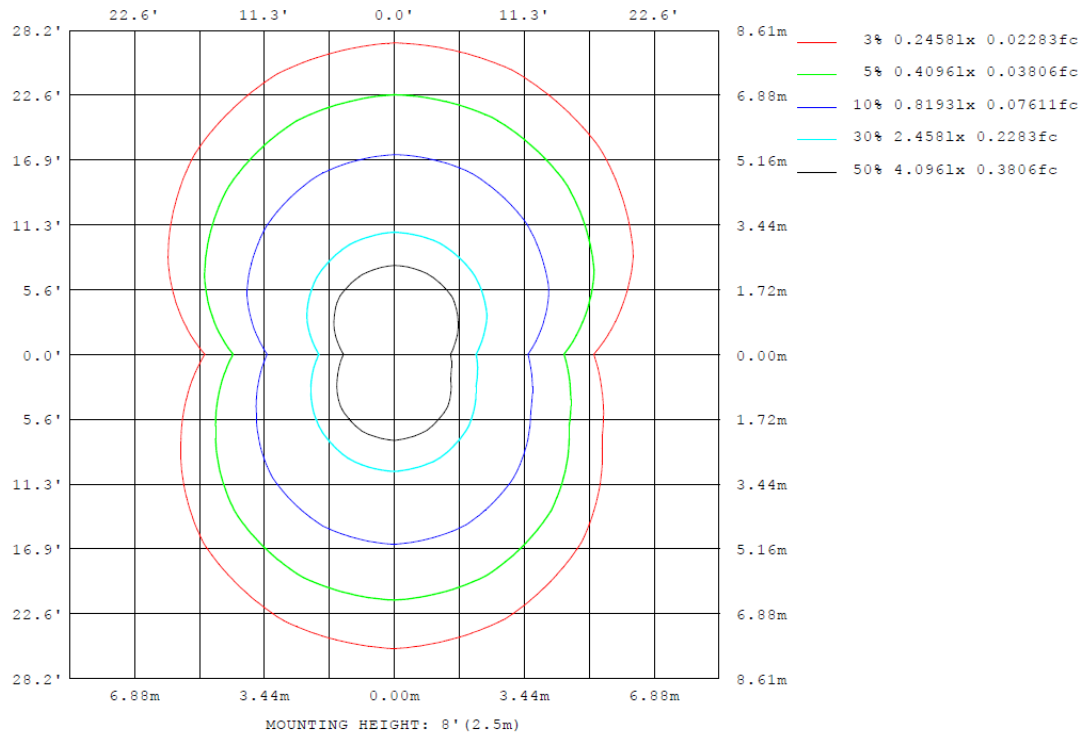
RESULTS OF TESTS (cont'd)

Test Condition: 120V, 60Hz For KWWS71027XXXALB

Model No.: KWWS71027XXXALB

Mount Height: 2.5 m

Isoillumination Plot



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

TEST REPORT

RESULTS OF TESTS (cont'd)

Test Condition: 120V, 60Hz For KWWS71027XXXALB

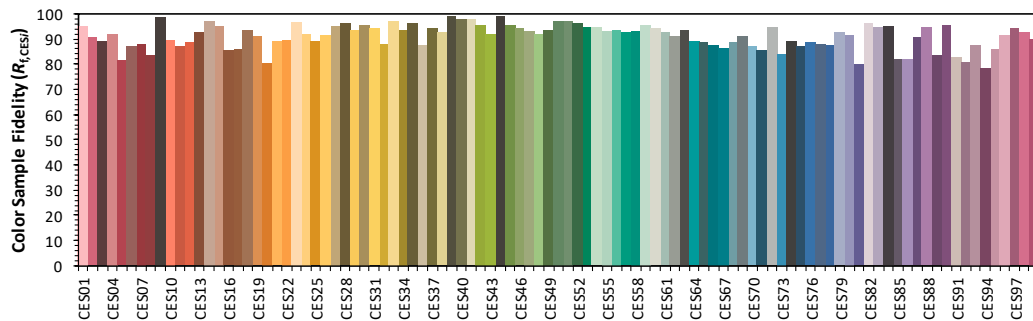
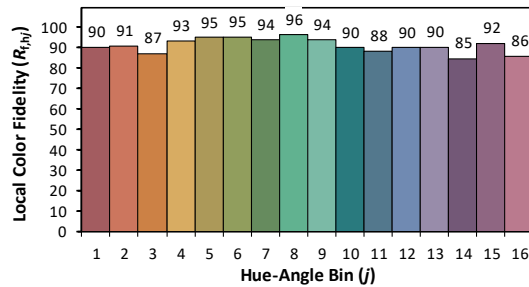
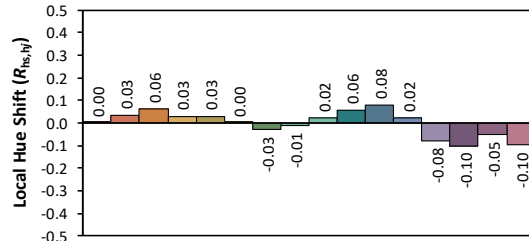
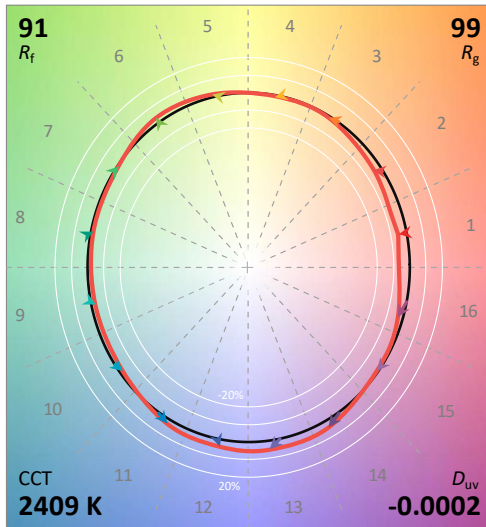
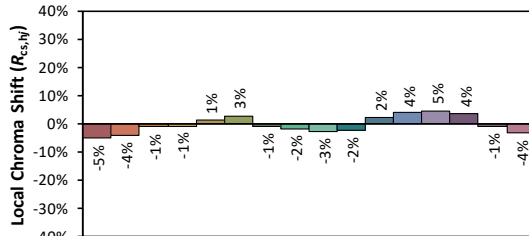
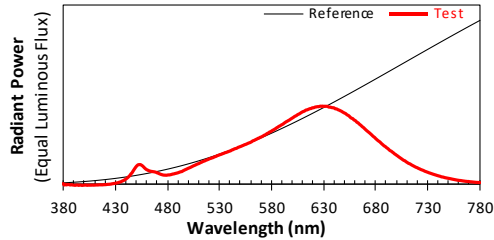
ANSI/IES TM-30-18 Color Rendition Report

Source: User SPD

Manufacturer: Visual Comfort & Co.

Date: 2024/11/22

Model: KWWS71027XXXALB



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

x 0.4849
 y 0.4139
 u' 0.2772
 v' 0.5324

CIE 13.3-1995
(CRI)

R_a 92
 R_g 57

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

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

TEST REPORT

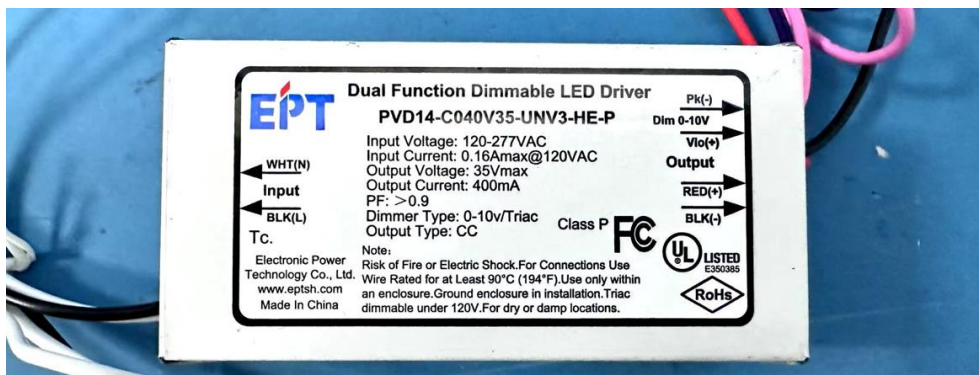
PRODUCT PICTURE (not to scale)



External view of KWWS71027XXXALB



External view of KWWS71027XXXALB



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 *****