

Visual Comfort and Company

TEST REPORT

SCOPE OF WORK

LM-79 testing report

REPORT NUMBER

221205125GZU-011

ISSUE DATE

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REVISION DATE

None

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13

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Report No.: 221205125GZU-011

TEST REPORT

TEST OF ONE LED LUMINAIRE

MODEL NO. KWWS10127*

(Remark: "*" denote other appearance colors for the characters that change)

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: QGZ221129088.
<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 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 KWWS10127*. The sample was received, in undamaged condition. The sample designation was S221205125-011.
<u>DATES OF TESTS:</u>	27 December 2022
<u>ISSUED BY:</u>	Intertek Testing Services Shenzhen Ltd. Guangzhou Branch
<u>TEST LOCATION:</u>	Room 02, & 101/E201/E301/E401/E501/E601/E701/E801 of Room 01 1-8/F., No. 7-2. Caipin Road, Science City, GETDD, Guangzhou, Guangdong, China

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TEST REPORT

SUMMARY

Model Number:	KWWS10127*
Description:	LED Luminaries
Brand Name:	--

Test Condition: 120V, 60Hz For KWWS10127*

Criteria	Result
Total Lumen Output	401.1 lm
Total Power	16.9 W
Luminaire Efficacy	23.7 lm/W
S/MH(C0/180)	1.16
S/MH(C90/270)	0.06
Correlated Color Temperature (CCT)	2564 K
Color Rendering Index (CRI)	91
R9	65
Chromaticity Coordinate (x)	0.4742
Chromaticity Coordinate (y)	0.4176
Chromaticity Coordinate (u')	0.2685
Chromaticity Coordinate (v')	0.5321

Remark:

Measurement uncertainty for applicable tests has been established.

***** 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	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

Standard lamp used for integrating sphere:

Model: S82134

Current: 1.830

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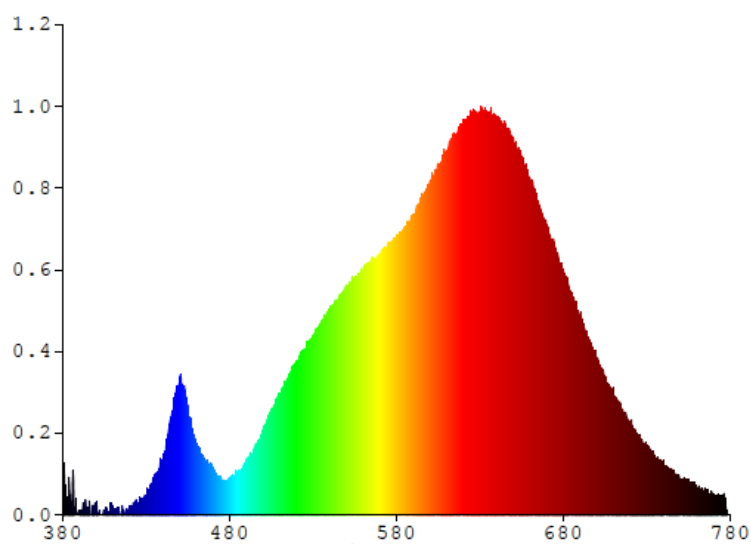
TEST REPORT

RESULTS OF TESTS

Test Condition: 120V, 60Hz For KWWS10127*

Spectral Distribution over Visible Wavelengths

nm	mW/nm	nm	mW/nm	nm	mW/nm	nm	mW/nm	nm	mW/nm
380	0.0001	480	0.0005	580	0.0041	680	0.0036	780	0.0000
385	0.0000	485	0.0006	585	0.0042	685	0.0032		
390	0.0000	490	0.0008	590	0.0044	690	0.0029		
395	0.0000	495	0.0010	595	0.0046	695	0.0025		
400	0.0000	500	0.0012	600	0.0049	700	0.0023		
405	0.0000	505	0.0016	605	0.0051	705	0.0020		
410	0.0001	510	0.0017	610	0.0053	710	0.0017		
415	0.0000	515	0.0020	615	0.0056	715	0.0016		
420	0.0001	520	0.0022	620	0.0058	720	0.0013		
425	0.0002	525	0.0024	625	0.0059	725	0.0012		
430	0.0002	530	0.0026	630	0.0059	730	0.0010		
435	0.0005	535	0.0028	635	0.0058	735	0.0008		
440	0.0007	540	0.0030	640	0.0058	740	0.0008		
445	0.0014	545	0.0032	645	0.0057	745	0.0006		
450	0.0020	550	0.0034	650	0.0055	750	0.0005		
455	0.0015	555	0.0035	655	0.0052	755	0.0005		
460	0.0010	560	0.0036	660	0.0049	760	0.0003		
465	0.0008	565	0.0037	665	0.0046	765	0.0003		
470	0.0007	570	0.0038	670	0.0043	770	0.0003		
475	0.0005	575	0.0040	675	0.0038	775	0.0002		



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TEST REPORT

RESULTS OF TESTS (cont'd)

Test Condition: 120V, 60Hz For KWWS10127*

Total operation burning time: 60 minutes

Stabilization time: 45 minutes

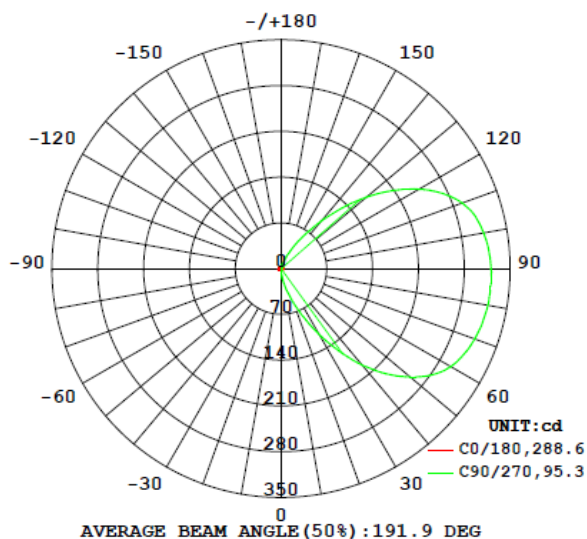
Photometric Measurements at 25°C – Integrating Sphere Method

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')
KWWS10127*								
S2212051 25-011	--	2564	91	65	0.4742	0.4176	0.2685	0.5321

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	Lumen
						Luminous Flux (Lumens)	Efficacy (Lumens Per Watt)
KWWS10127*							
S2212051 25-011	--	120.2	142.3	16.9	0.990	401.1	23.7

Intensity (Candlepower) Summary at 25°C – Candelas



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TEST REPORT

RESULTS OF TESTS (cont'd)

Test Condition: 120V, 60Hz For KWWS10127*

Intensity (Candlepower) Summary at 25°C - Candelas

V \ H(°)	0	22.5	45	67.5	90
0	2.6	2.6	2.6	2.6	2.6
5	2.6	4.4	6.5	8.3	9.0
10	2.4	5.6	10.9	16.8	19.6
15	2.0	5.9	15.2	27.7	34.3
20	1.9	5.6	17.2	40.7	54.9
25	1.9	5.4	18.3	56.0	82.1
30	2.0	4.3	18.0	71.4	115.7
35	2.2	3.7	18.0	85.6	153.6
40	2.5	4.1	19.7	97.3	191.9
45	3.0	4.8	22.7	109.1	227.0
50	3.3	5.8	24.3	125.9	258.2
55	3.5	6.7	25.9	145.6	282.5
60	3.9	7.4	27.5	165.4	299.2
65	4.3	8.1	28.3	183.1	308.6
70	4.7	8.7	28.9	197.5	314.7
75	4.7	9.0	29.5	207.6	318.4
80	3.8	9.1	29.5	212.3	320.8
85	3.6	8.9	29.1	211.2	321.2
90	3.5	8.7	28.3	204.2	320.7
95	3.6	8.5	27.0	191.4	318.4
100	3.8	8.1	25.3	173.9	314.3
105	3.9	7.4	23.3	152.0	307.7
110	4.3	6.7	21.0	127.3	294.3
115	3.8	6.0	18.6	102.6	272.6
120	2.9	5.0	16.3	81.3	243.7
125	2.3	4.2	14.2	65.0	208.8
130	2.0	3.4	11.7	55.3	170.5
135	1.6	2.9	10.0	49.1	131.3
140	1.4	2.4	7.5	41.8	94.8
145	1.3	2.1	6.3	32.7	64.3
150	1.0	1.9	5.2	23.2	40.8
155	1.1	1.5	3.8	14.8	23.6
160	1.0	1.2	2.4	7.4	11.1
165	0.7	0.8	1.0	2.2	3.3
170	0.3	0.3	0.4	0.3	0.4
175	0.1	0.1	0.1	0.2	0.2
180	0.3	0.2	0.1	0.1	0.1

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TEST REPORT

RESULTS OF TESTS (cont'd)

Test Condition: 120V, 60Hz For KWWS10127*

Zonal Lumen Summary and Percentages at 25°C

Zone	Lumens (lm)	% Luminaire (%)
KWWS10127*		
0-30	10.3	2.6
0-40	25.1	6.3
0-60	84.9	21.2
0-90	234.3	58.4
60-90	149.4	37.2
0-180	401.1	100

Beam Angle

Total Beam Angle (°)

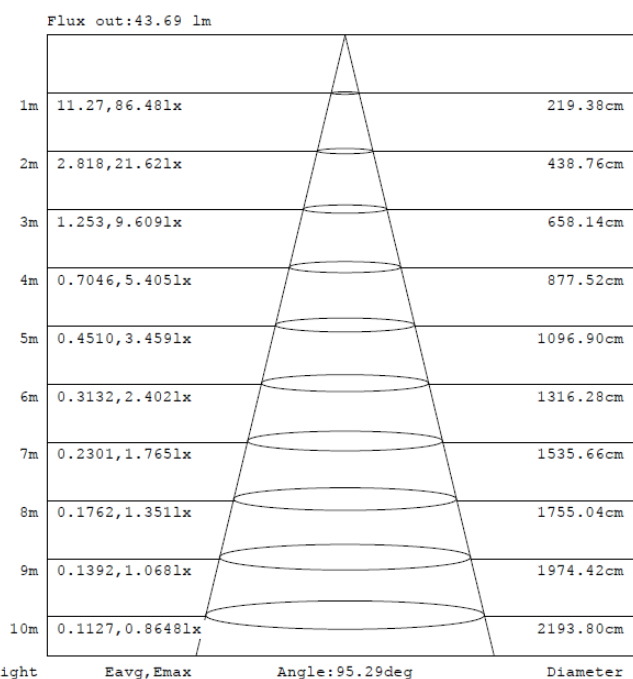
191.9

Illumination Plots

Model No.: KWWS10127*

Mount Height: 2.5 m

Illuminance - Cone of Light



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TEST REPORT

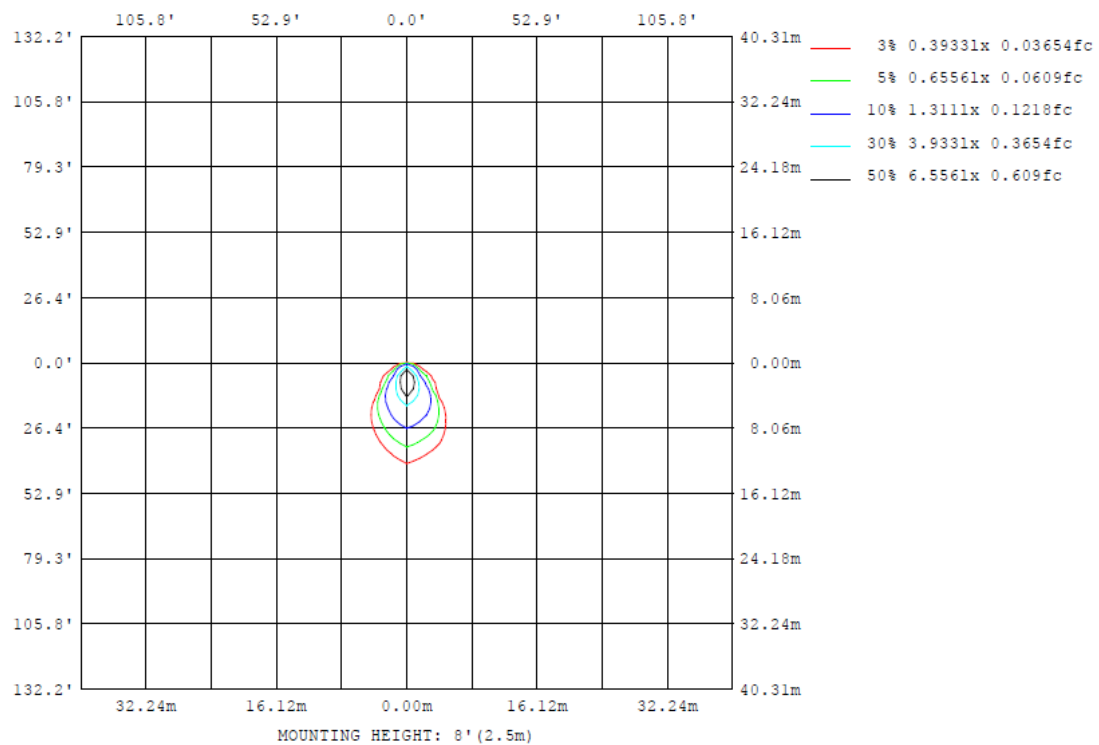
RESULTS OF TESTS (cont'd)

Test Condition: 120V, 60Hz For KWWS10127*

Model No.: KWWS10127*

Mount Height: 2.5 m

Isoillumination Plot



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TEST REPORT

RESULTS OF TESTS (cont'd)

Test Condition: 120V, 60Hz For KWWS10127*

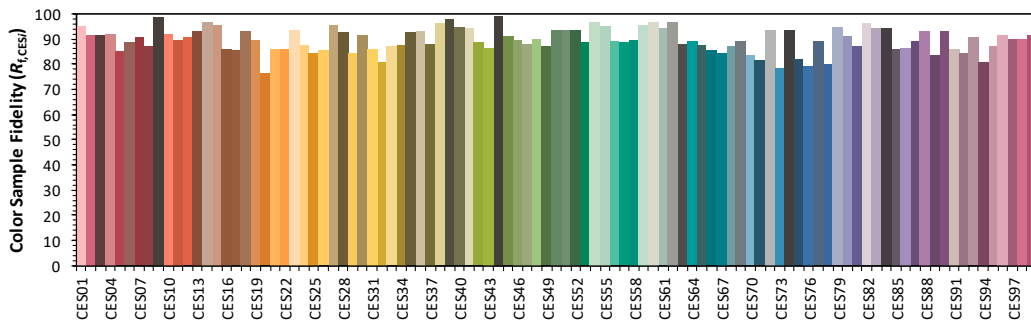
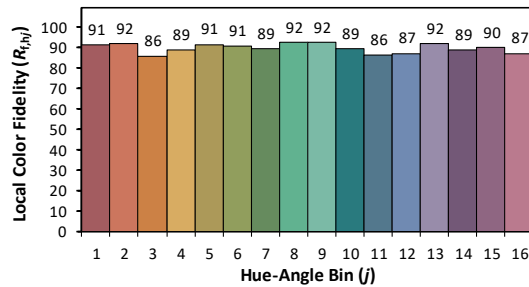
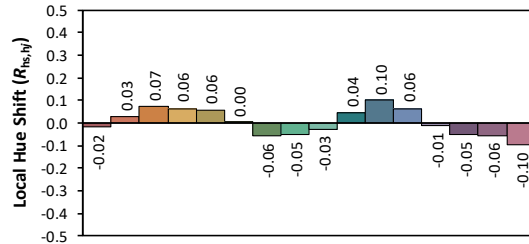
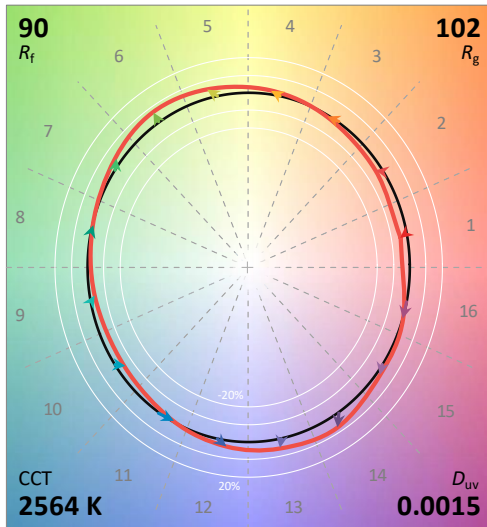
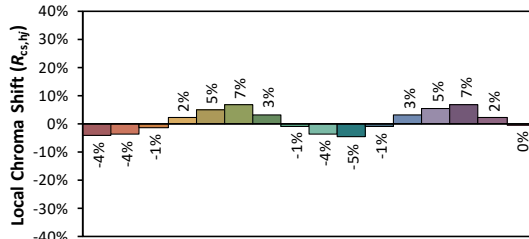
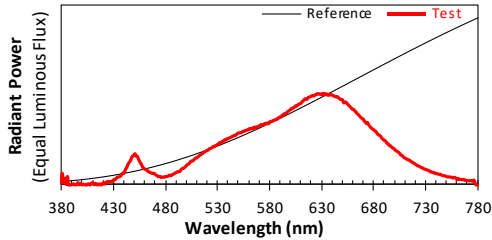
ANSI/IES TM-30-18 Color Rendition Report

Source: User SPD

Manufacturer: Visual Comfort and Company

Date: 2022/12/27

Model: KWWS10127*



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

x 0.4742
 y 0.4176
 u' 0.2685
 v' 0.5321

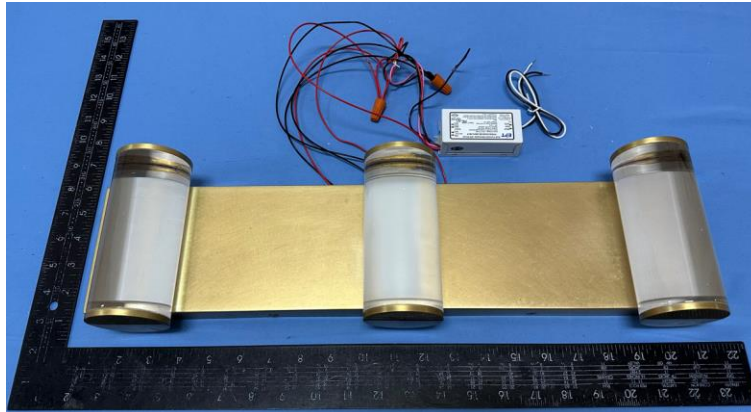
CIE 13.3-1995
(CRI)
 R_a 91
 R_g 65

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

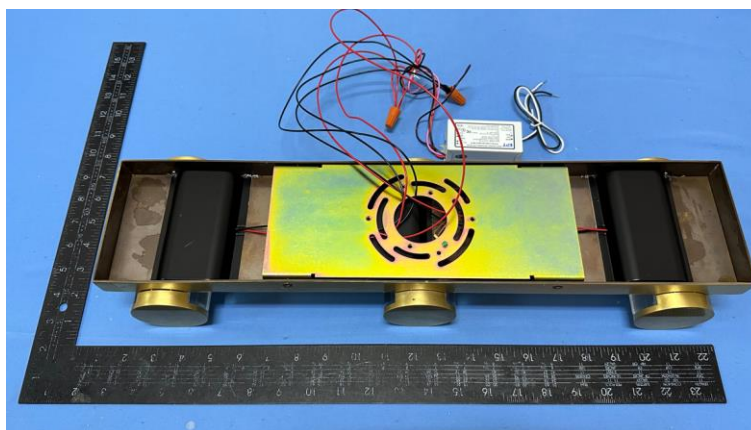
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TEST REPORT

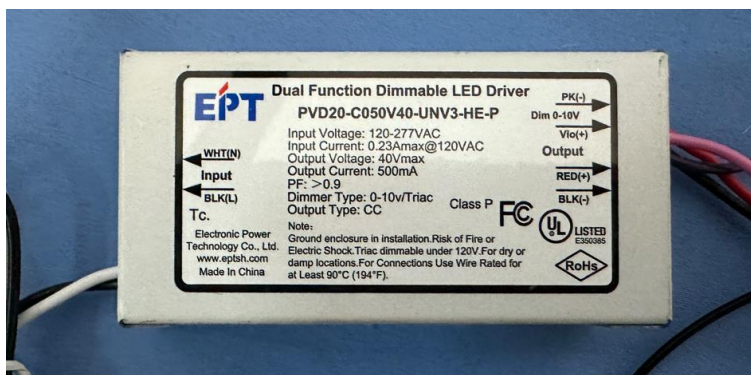
PRODUCT PICTURE (not to scale)



External view of KWWS10127*



External view of KWWS10127*



View of LED Driver PVD20-C050V40-UNV3-HE-P

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TEST REPORT

PRODUCT PICTURE (not to scale)



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 *****