LCTECH

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Test report of

IES LM-79-08

Approved Method: Electrical and Photometric Measurements of Solid-State Lighting Products

Rendered to:

Artika for Living Inc.
1756, 50e Avenue Montréal (Lachine), Québec Canada H8T 2V5

For products:

Under Cabinet Mount

Models No.:

UCL

Test Date:	Apr. 8, 2022 to Apr. 9, 2022
Test Lab.:	**LCTECH Guangdong Testing Services Co., Ltd.** 2/F., Technology and Enterprise Development Center, Guangyuan Road, Xiaolan, Zhongshan, Guangdong, China Tel:+86-760-22833366 E-mail:Service@lccert.com http://www.lccert.com
Test Sites:	1/F., Building I, Technology and Enterprise Development Center, Guangyuan Road, Xiaolan, Zhongshan, Guangdong, China
Template No.:	LC-RT-PL-001 Rev.1.4
Test Note:	*N/A*

Complied by:		**Reviewed by:**	
Pengkang Liang	Pengkang Liang	**Lin Qiu**	Lin Qiu
Apr. 12, 2022		**Apr. 12, 2022**	

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1. General

1.1 Product Information

Brand Name	Artika
Product Type	Under Cabinet Mount
Model Number	UCL
Rated Inputs	120-240V,60Hz
Rated Power	27W
Rated Light output	-
Declared CCT	4000K
Power Supply	LED Driver
LED Package, Array or Module	-
Receipt Samples	1 unit
Sample Code of lab.	220406107002
Date of Receipt Samples	Apr. 6, 2022
Note	-

1.2 Standards or methods

The following standards are partly or totally used or referenced for test:

No.	Name
ANSI/NEMA/ ANSLG C78.377-2011 or 2015 or 2017	Specifications for the Chromaticity of Solid State Lighting Products
ANSI C82.77-2002	Harmonic Emission Limits—Related Power Quality Requirements for Lighting Equipment
CIE Pub. No. 13.3-1995	Method of Measuring and Specifying Color Rendering of Light Sources
CIE Pub. No. 15:2004	Colorimetry
IES LM-79-08	Electrical and Photometric Measurements of Solid-State Lighting Products

1.3 Equipment list

Instrument	ID	Model name	Cal. date	Next cal. Date
AC Power supply	LC-I-987	APW-120N	2021-12-16	2022-12-15
AC Power supply	LC-I-989	APW-120N	2021-12-16	2022-12-15
Power analyzer	LC-I-PL-024	WT310E	2022-03-01	2023-02-28
Power analyzer	LC-I-954	WT210	2021-12-20	2022-12-19
Multimeter	LC-I-972	Fluke 17B	2021-07-12	2022-07-11
Photometric colorimetric electric system[1] (2 meter sphere)	LC-I-956	HAAS-2000	Before use	Before use
Standard lamp[2]	LC-I-PL-030	D204C	2021-07-09	2022-07-08
Luminous Flux Standard Lamp[3]	LC-I-PL-027	24V/100W	2021-07-09	2022-07-08
Goniophotometer(with mirror)	LC-I-902	GMS2000	2021-04-22	2022-04-21
Wireless temperature and humidity transmitter	LC-I-PL-009	DWLR-DLR	2021-12-16	2022-12-15
Wireless temperature and humidity transmitter	LC-I-PL-008	DWLR-DLR	2021-12-16	2022-12-15

Note:

1, Bandwidth of spectroradiometer is 1 nm.

2, halogen lamp, 100W, omni-directional type, and its traceability to NIM.

3, halogen lamp, 100W, omni-directional type, and its traceability to NIM.

2. Test conducted and method

The lamp/luminaire was operated at least 2 hours to reach stabilization and temperature equilibrium before test.

2.1 Ambient Condition

The ambient temperature in which measurements are being taken was maintained at 25°C ± 1°C; the air flow around the sample(s) being tested did not affect the performance.

2.2 Power Supply Characteristics

The AC power supply had a sinusoidal voltage wave shape at the prescribed frequency (60 Hz) such that the RMS summation of the harmonic components does not exceed 3 percent of the fundamental during operation of the test item.

The voltage of AC power supply (RMS voltage) applied to the device under test was regulated to within±0.2 percent under load.

2.3 Seasoning and Stabilization

No seasoning was performed in accordance with IESNA LM-79-08. And before the measurement, the sample was stabilized until the light output and power variations were less than 0.5% in 30 minutes intervals (3 readings, 15 minutes apart).

2.4 Electrical Instrumentation

The calibration uncertainties of the instruments for AC voltage and current were less than 0.2 percent, and the calibration uncertainty of the AC power meter was less than 0.5 percent(95 % confidence interval, k=2).

2.5 Color Measurement Method

Spectral radiant flux was measured by a sphere (2 meter)-spectroradiometer system, and the color characteristics (Color rendering index, correlated color temperature, chromaticity coordinate) were calculated from these by software automatically.

2.6 Total Luminous Flux Measurement Method

Total luminous flux was measured by type C goniophotometer system.

Light intensity distribution was measured by a type C goniophotometer (with mirror) which can keep the sample in burn position when the tests conduct, and the total luminous flux was calculated from the intensity data by software automatically.

2.7 Luminous Intensity Distribution Measurement Method

Luminous intensity distribution was measured by a mirror-type goniophotometer (Type C) which can keep the sample in burn position when the tests conduct, and the kinds of graph were generated by software automatically.

2.8 Spatial Non-uniformity of Chromaticity

The customer did not require this measurement.

3. Test Result Summary

3.1 Electrical data

Criteria Item	Result(Sphere)	Result(Goniophotometer)
Input Voltage & Frequency	119.99V~60Hz	120.01V~60Hz
Input Current(A)	0.264	0.263
Total Power(W)	27.43	27.33
Power Factor	0.867	0.866
Off-state Power(W)	-	-

3.2 Photometric data

Criteria Item	Result(Sphere)	Result(Goniophotometer)
Total Lumens(lm)	-	1600.84
Luminaire Efficacy(lm/W)	-	58.57
Correlated Color Temperature (CCT)(K)	3866	-
Color Rendering Index (CRI)	83.2	-
R9	7	-
Chromaticity Coordinate (x,y)	x = 0.3887 y = 0.3876	-
Chromaticity Coordinate (u,v)	u = 0.2262 v = 0.3383	-
Chromaticity Coordinate (u',v')	u' = 0.2262 v' = 0.5075	-
Duv	0.0027	-
Zone Lumens between 0-60 º	-	78.59%
Beam Angle(50%Imax)	-	C0/180=113.0° C90/270=113.0°

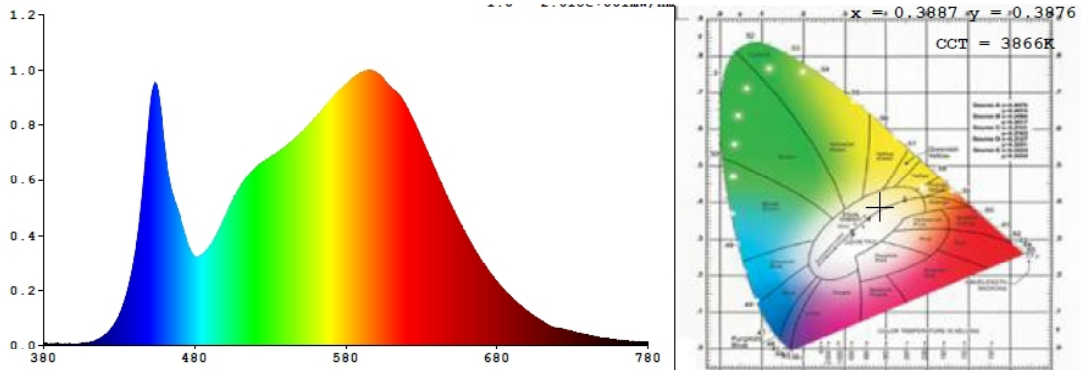
3.3 Color Rendering Details

R1	R2	R3	R4	R5	R6	R7	R8
81	91	96	81	81	87	85	63
R9	R10	R11	R12	R13	R14	R15	-
7	78	80	63	84	98	74	-

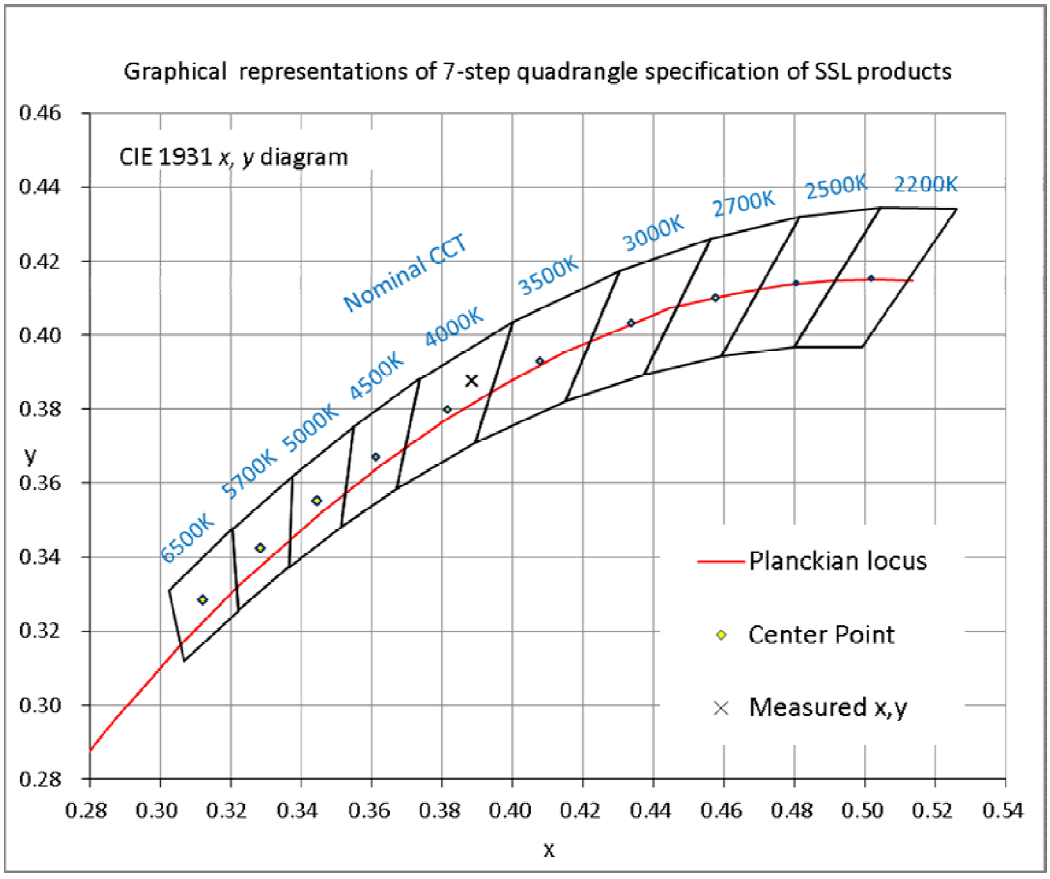
Note: N/A

4. Test Data

4.1 Spectral Distribution



4.2 ANSI Chromaticity Quadrangles Diagram



4.3 Goniometry Test Data

CIE Type	Direct	Basic Luminous Shape	Rectangular
Spacing Criteria (0-180)	1.26	Luminous Length	1.38 m
Spacing Criteria (90-270)	1.26	Luminous Width	0.04 m
Spacing Criteria (Diagonal)	1.40	Luminous Height	0.00 m
Test Distance	29.75 m		

4.4 Zonal Lumen Summary

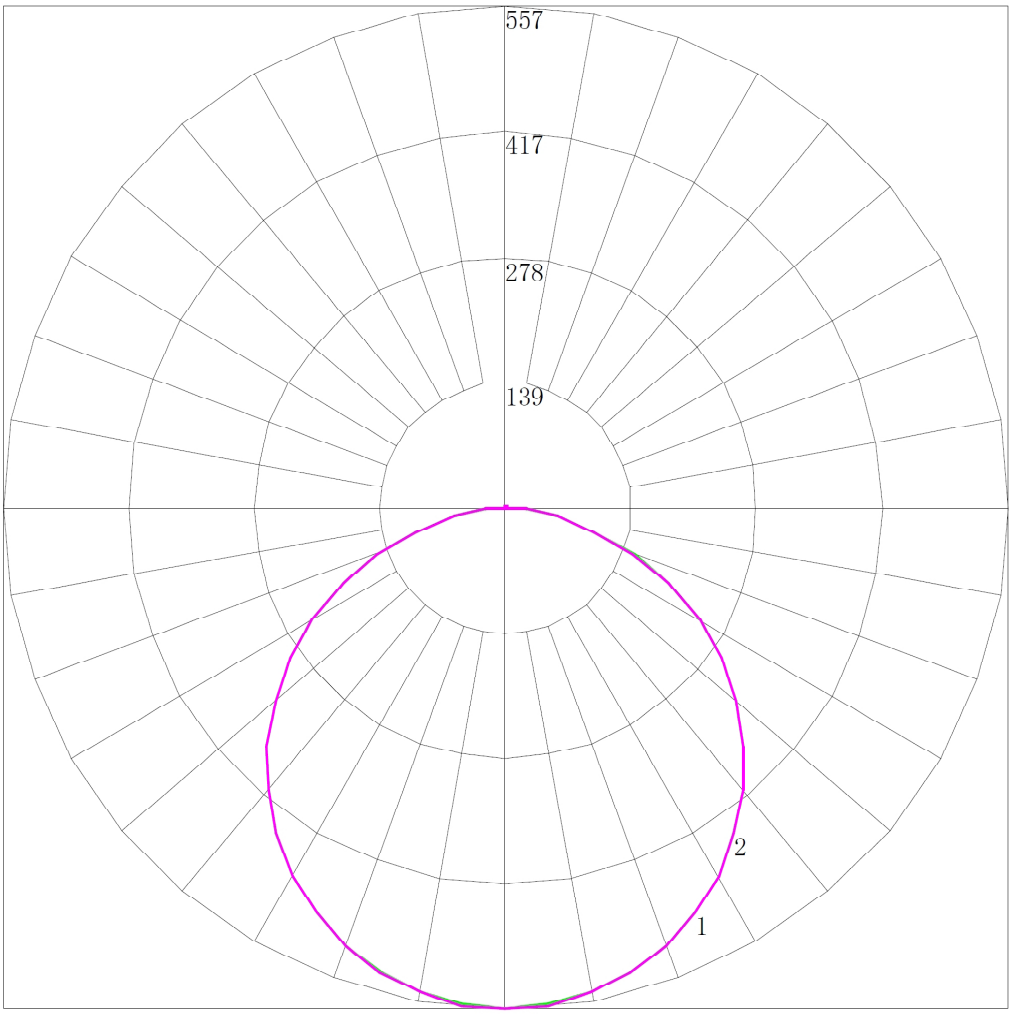
Zone	Lumens	%Lamp	%Fixt
0-20	203.66	12.70	12.70
0-30	432.82	27.00	27.00
0-40	709.50	44.30	44.30
0-60	1258.09	78.60	78.60
0-80	1565.78	97.80	97.80
0-90	1594.35	99.60	99.60
10-90	1541.67	96.30	96.30
20-40	505.84	31.60	31.60
20-50	793.82	49.60	49.60
40-70	746.14	46.60	46.60
60-80	307.69	19.20	19.20
70-80	110.15	6.90	6.90
80-90	28.57	1.80	1.80
90-110	2.80	0.20	0.20
90-120	3.49	0.20	0.20
90-130	4.15	0.30	0.30
90-150	5.41	0.30	0.30
90-180	6.49	0.40	0.40
110-180	3.69	0.20	0.20
0-180	1600.84	100.00	100.00

Total Luminaire Efficiency = 100.00%

ZONAL LUMEN SUMMARY

Zone	Lumens
0-10	52.68
10-20	150.98
20-30	229.16
30-40	276.68
40-50	287.98
50-60	260.61
60-70	197.54
70-80	110.15
80-90	28.57
90-100	1.94
100-110	0.86
110-120	0.69
120-130	0.65
130-140	0.64
140-150	0.63
150-160	0.56
160-170	0.39
170-180	0.14

4.5 Polar Curves

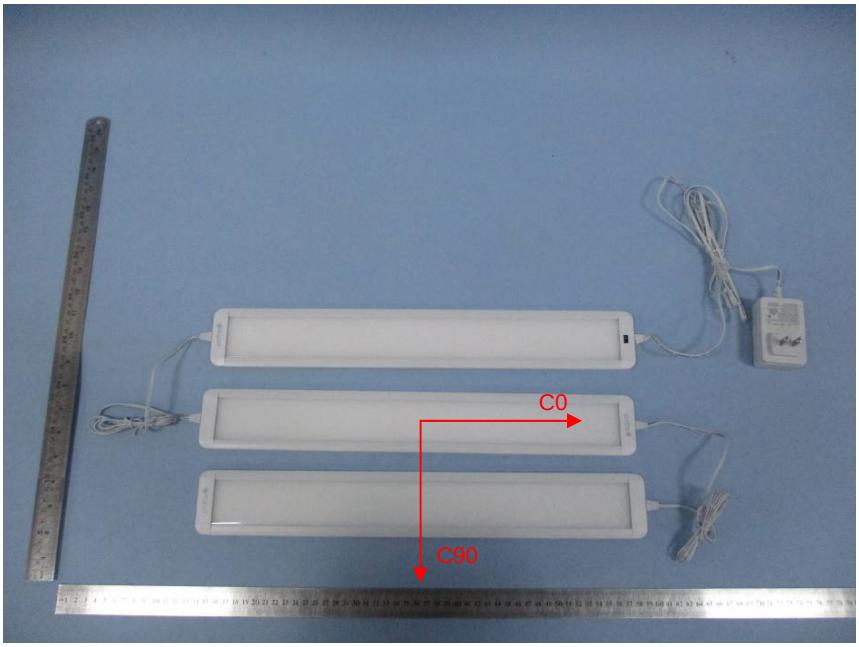


Maximum Candela = 556.601 Located At Horizontal Angle = 0, Vertical Angle = 0
1 - Vertical Plane Through Horizontal Angles (0 - 180)
2 - Vertical Plane Through Horizontal Angles (90 - 270)

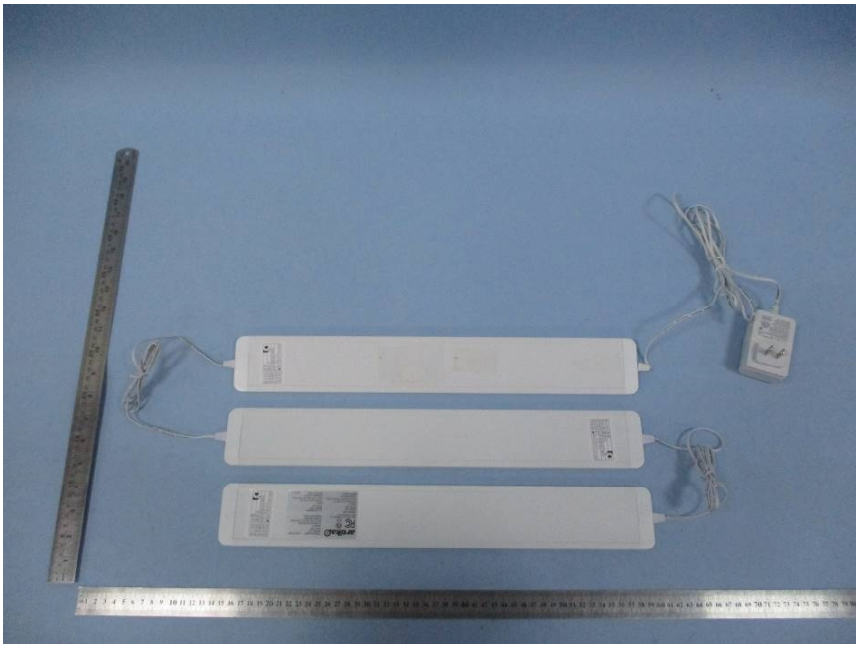
4.6 Candela Tabulation

	0	15	30	45	60	75	90
0	556.601	556.601	556.601	556.601	556.601	556.601	556.601
5	554.286	554.581	554.381	554.209	554.144	554.159	554.848
10	547.161	547.143	546.955	547.184	546.687	547.077	547.397
15	535.050	534.886	534.454	535.063	534.712	535.178	535.301
20	518.574	518.034	517.669	518.642	518.332	518.438	518.384
25	497.601	496.851	496.073	497.900	496.993	497.260	497.698
30	472.488	471.117	469.888	472.882	474.900	472.040	472.191
35	442.743	441.720	439.857	443.517	442.250	442.293	442.958
40	409.747	409.103	407.403	410.452	409.354	409.436	410.132
45	373.502	373.089	371.457	379.090	372.521	373.760	373.536
50	333.961	333.521	332.412	334.839	333.163	334.066	333.742
55	291.614	291.957	290.444	292.449	290.837	292.241	291.580
60	247.621	246.949	250.703	247.790	246.363	247.131	247.315
65	199.842	199.633	198.244	200.386	199.054	200.223	199.368
70	151.306	151.163	150.520	151.672	151.130	151.827	150.852
75	102.682	108.160	102.833	103.407	103.711	103.896	102.555
80	57.441	57.973	57.921	57.996	58.440	58.563	58.114
85	20.438	20.938	21.197	21.711	22.064	21.776	22.264
90	3.918	3.308	3.820	4.095	4.003	3.684	4.120
95	0.980	1.110	1.384	1.418	1.306	1.021	0.745
100	0.891	0.888	0.989	0.997	0.974	0.866	0.614
105	0.846	0.844	0.879	0.797	0.797	0.733	0.657
110	0.802	0.777	0.769	0.731	0.752	0.688	0.614
115	0.757	0.733	0.725	0.643	0.642	0.599	0.614
120	0.757	0.822	0.725	0.687	0.664	0.644	0.657
125	0.802	0.777	0.747	0.754	0.686	0.666	0.614
130	0.846	0.799	0.769	0.732	0.775	0.733	0.745
135	0.891	0.822	0.835	0.798	0.775	0.821	0.789
140	0.980	0.955	0.923	0.887	0.886	0.866	0.877
145	1.113	1.021	0.989	0.998	0.952	0.977	0.964
150	1.113	1.088	1.121	1.086	1.041	1.154	1.052
155	1.247	1.288	1.230	1.219	1.240	1.243	1.183
160	1.336	1.288	1.296	1.307	1.284	1.310	1.315
165	1.336	1.354	1.362	1.330	1.350	1.354	1.359
170	1.469	1.488	1.429	1.485	1.461	1.465	1.402
175	1.558	1.576	1.539	1.529	1.528	1.532	1.534
180	0.796	0.796	0.796	0.796	0.796	0.796	0.796

Appendix A Product Photo



Picture 1



Picture 2

****End of test report****