TEST REPORT

Of ANSI/IES LM-79-19

Kunde: *Client:*	Shenzhen Penel Optoelectronics Technology Co., Ltd
Adresse: *Address:*	The 4th Floor ,Xihe Industrial Park, Tangtou Avenue, Shiyan Street, Bao'an District, Shenzhen, China
Hersteller: *Manufacturer:*	Shenzhen Penel Optoelectronics Technology Co., Ltd
Adresse: *Address:*	The 4th Floor ,Xihe Industrial Park, Tangtou Avenue, Shiyan Street, Bao'an District, Shenzhen, China
Name der Marke: *Brand Name:*	PENEL
Beschreibungdes Produkts: *Product Description:*	LED STREET LIGHT
Modelle: *Models:*	STL-80W
Bewertung: *Rating:*	AC100-277V, 50/60Hz, 80W
Verfahren: *Method:*	ANSI/IES LM-79-19: Approved Method for Electrical and Photometric Measurements of Solid-State Lighting Products
Prüfergebnis*: *Test result*:*	Please see the following test data

Datum der Prüfung: *Date of Test:*	**Datum der Emission:** *Date of Issue:*	**Klassifizierung:** *Classification:*	**Gegenstand der Prüfung:** *Test item:*
2025-09-12	2025-09-16	Commission Test	ANSI/IES LM-79-19

Prüflabor (Testlabor) / Testing Laboratory:
Shenzhen Southern LCS Compliance Testing Lab Ltd.
Add:101-201, No.39 Building, Xialang Industrial Zone, Heshuikou Community, Matian Street, Guangming New District, Shenzhen, Guangdong Prov. 518000 China.

Compiled von/Compiled by:	**Check von**/Check by:	**Genehmigt von**/Approved by:
Niko Zhang	Ian Luo	
Niko Zhang/ Project Engineer	Ian Luo/ Director	Jesse Liu/ Manager

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1. Test Method

Test Item..... :	Integrating Sphere Test
Ambient Condition .....:	25.6℃
Stabilization time .....:	35 min
Orientation(burning position) of SSL product during test .....:	down
Test Method .....:	The sample was tested according to the ANSI/IES LM-79-19. The sample measurements were made using a spectroradiometer connected by a fiber optic cable and detector through the detector port of the integrating sphere. 4π geometry was used during measurement.The sample was self-absorption correction used for integrating sphere, then operated at rated voltage and was stabilized before measurement. Chromaticity coordinates, correlated color temperature and color rendering index were calculated from the spectral radiant flux measurements taken at 1 nm intervals over the range of 380 to 780 nm.
Test Item.....:	Goniophotometer Test
Ambient Condition.....:	24.5℃
Total operated time of the product for measurements including stabilization..... .....:	32 min
Orientation(burning position) of SSL product during test .....:	down
Test Method.....:	The sample was tested according to the ANSI/IES LM-79-19.Photometric paramters were measured using a type C goniophotometer and software. The sample reference plane was located at the center of the sample goniometer at a test distance of 26m from the detectors. The samples were operated at rated voltage and was stabilized before measurement. Luminous flux, Luminous efficacy, zonal flux were calculated from the software taken at 1° vertical intervals and 22.5°horizontal intervals.

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2. Product Information

Product description.....:	LED STREET LIGHT
Model Number.....:	STL-80W
Rated Inputs.....:	AC100-277V, 50/60Hz
Rated Power.....:	80W
Declared CCT.....:	4000K
LED Manufacturer.....:	N/A
LED Model.....:	N/A
Forward current of the LED chip.....:	N/A
Manufacturer of driver.....:	N/A
Drive model.....:	N/A
Date of Receipt Samples.....:	September 11, 2025
Quantity of Receipt Samples.....:	1 unit

3. Test equipment list

Manufacturer	Description	Equipment ID	Model	Calibration Date	Calibration Due Date
EVERFINE	Full-field Speed Goniophotometer	SLCS-S-112	GO-R5000	2025/05/27	2026/05/26
EVERFINE	Digital Power Meter	SLCS-S-103	PF2010	2025/05/27	2026/05/26
EVERFINE	AC Testing Power Source	SLCS-S-115	DPS1060	2025/05/27	2026/05/26
EVERFINE	Total Spectral Radiant Flux Standard Lamp	SLCS-S-143	D908S	2025/06/02	2026/06/01
EVERFINE	2 Meter Integrating Sphere	SLCS-S-312	HAAS2000	2025/05/27	2026/05/26
EVERFINE	Digital Power Meter	SLCS-S-309	PF9810	2025/05/27	2026/05/26
EVERFINE	AC Testing Power Source	SLCS-S-310	DPS1005	2025/05/27	2026/05/26
EVERFINE	DC Testing Power Source	SLCS-S-311	WY605	2025/05/27	2026/05/26
OSRAM	Standard Lamp	SLCS-S-313	DC24V/50W	2025/06/02	2026/06/01
Statement of Traceability: All calibration of the equipment has been performed using suitable standards traceable to national primary standards and International System of Unit(SI).					

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4. Integrating Sphere Test Results

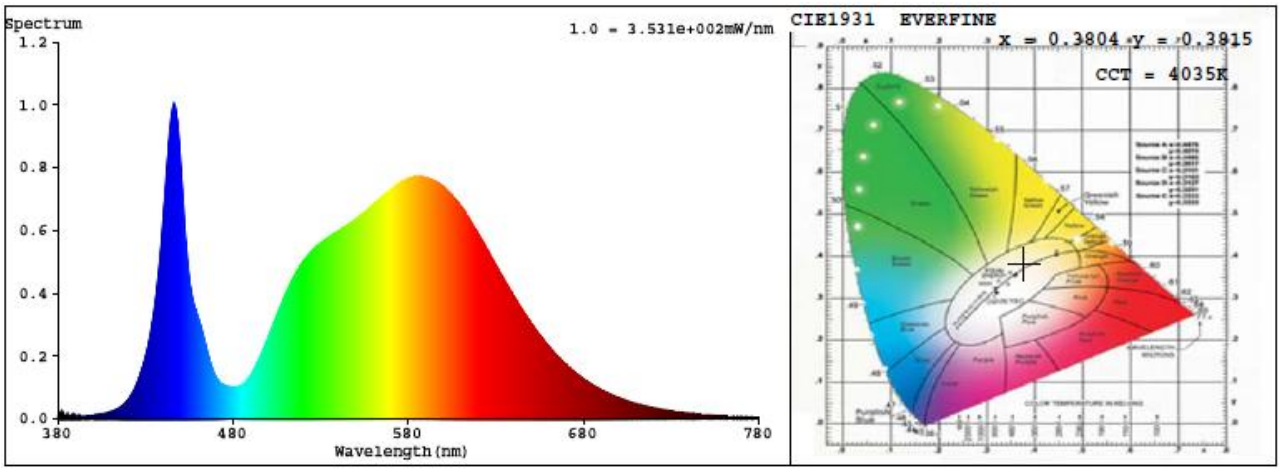
4.1 Test Data

Test type	Voltage (V AC)	Frequency (Hz)	Current (A)	Power Factor	Power (W)
Input	230.14	49.99	0.3597	0.9692	80.24

Luminous flux (lm)	Luminous efficacy(lm/W)	CCT (K)	x	y	u'	v'
12825	159.83	4035	0.3804	0.3815	0.2232	0.5037

Duv	CRI	R9	Rf	Rg	IES Rcs
2.22e-03	73.2	-29	76	94	-17%

4.2 Spectrum



Colorimetric Parameters

Chromaticity Coordinate: x = 0.3804 y = 0.3815 / u' = 0.2232 v' = 0.5037 (duv=2.22e-03)

CCT= 4035K Prcp WL: Ld=577.8nm Purity=28.7%

Peak WL: Lp=447nm FWHM: =16.0nm Ratio:R=16.8% G=80.8% B=2.4%

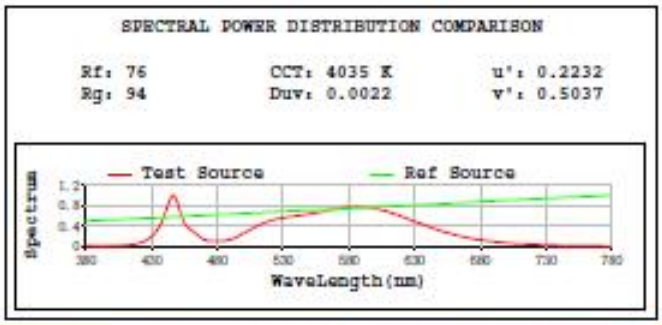
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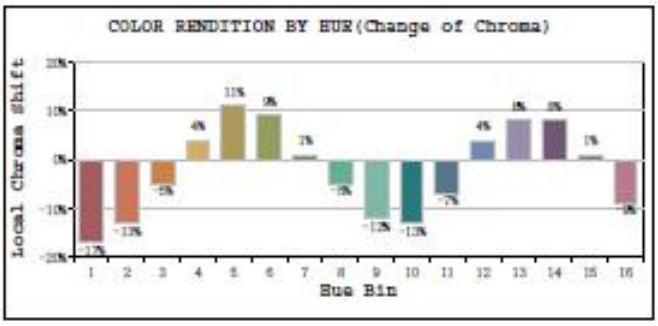
R1 =70	R2 =79	R3 =87	R4 =74	R5 =71	R6 =71	R7 =81	
R8 =53	R9 =-29	R10=51	R11=71	R12=46	R13=72	R14=92	R15=63

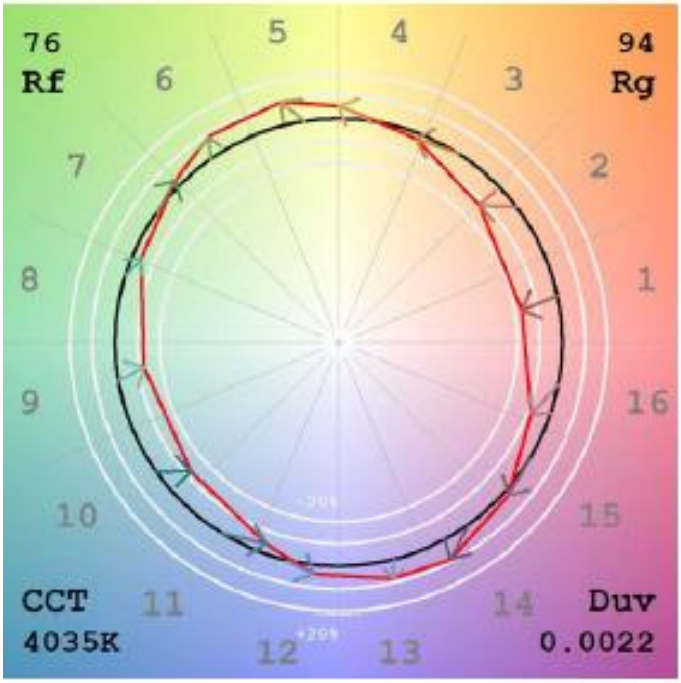
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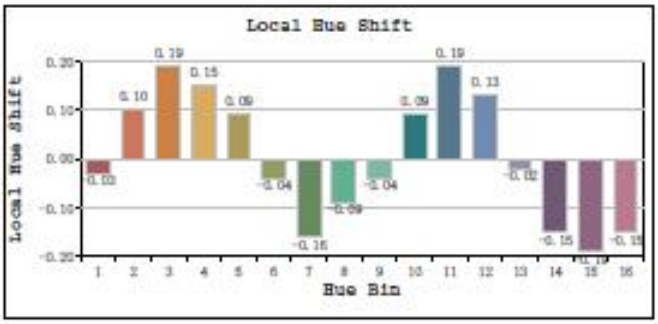
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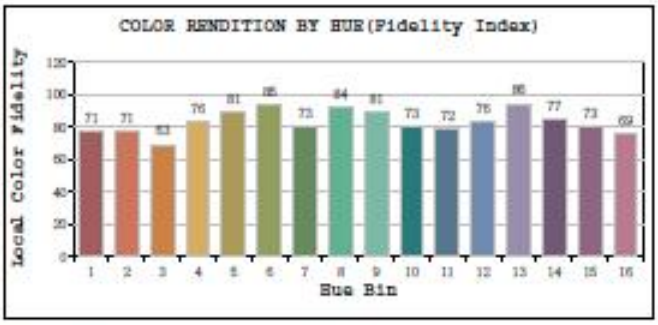
4.3 IES TM-30-18 Color Rendition Result

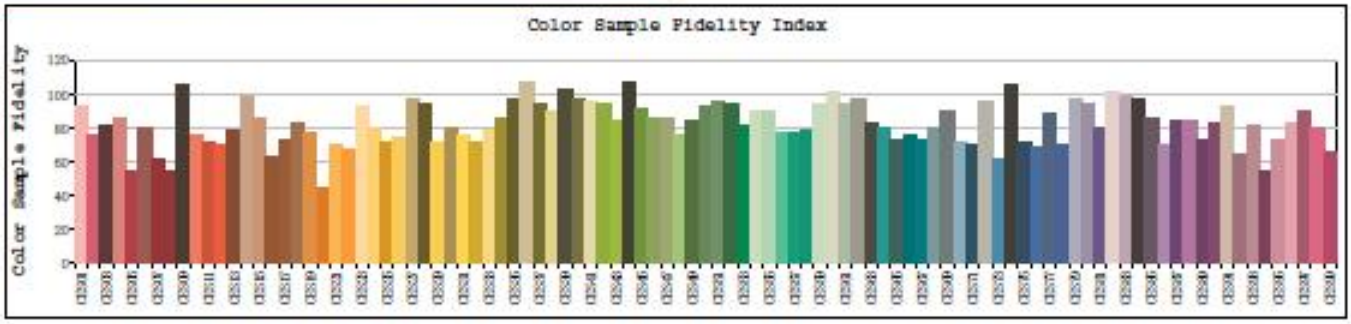












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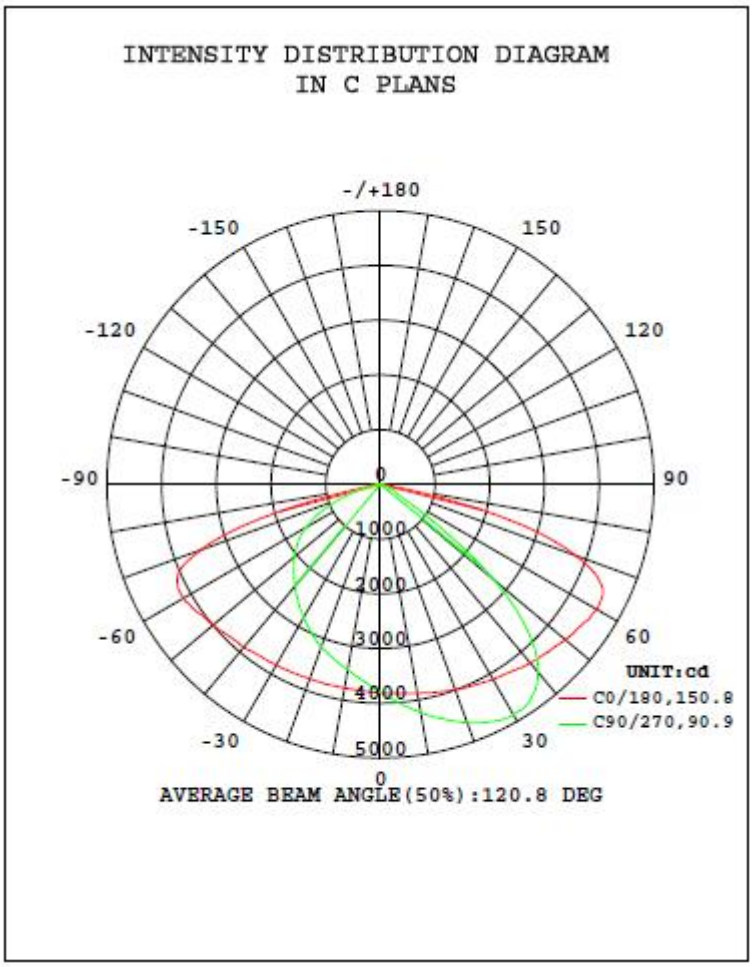
5. Goniophotometer Test results

5.1 Test Data

Test type	Voltage (V AC)	Frequency (Hz)	Current (A)	Power Factor	Power (W)
Input	230.2	50.01	0.3596	0.9699	80.26

Test type	Total Flux (lm)	Luminous efficacy(lm/w)	Imax (cd)	ZL (0~90°)	ZL (80~90°)
Output	12831.6	159.88	4380	99.8%	0.4%

5.2 Luminous Intensity Distribution Diagram



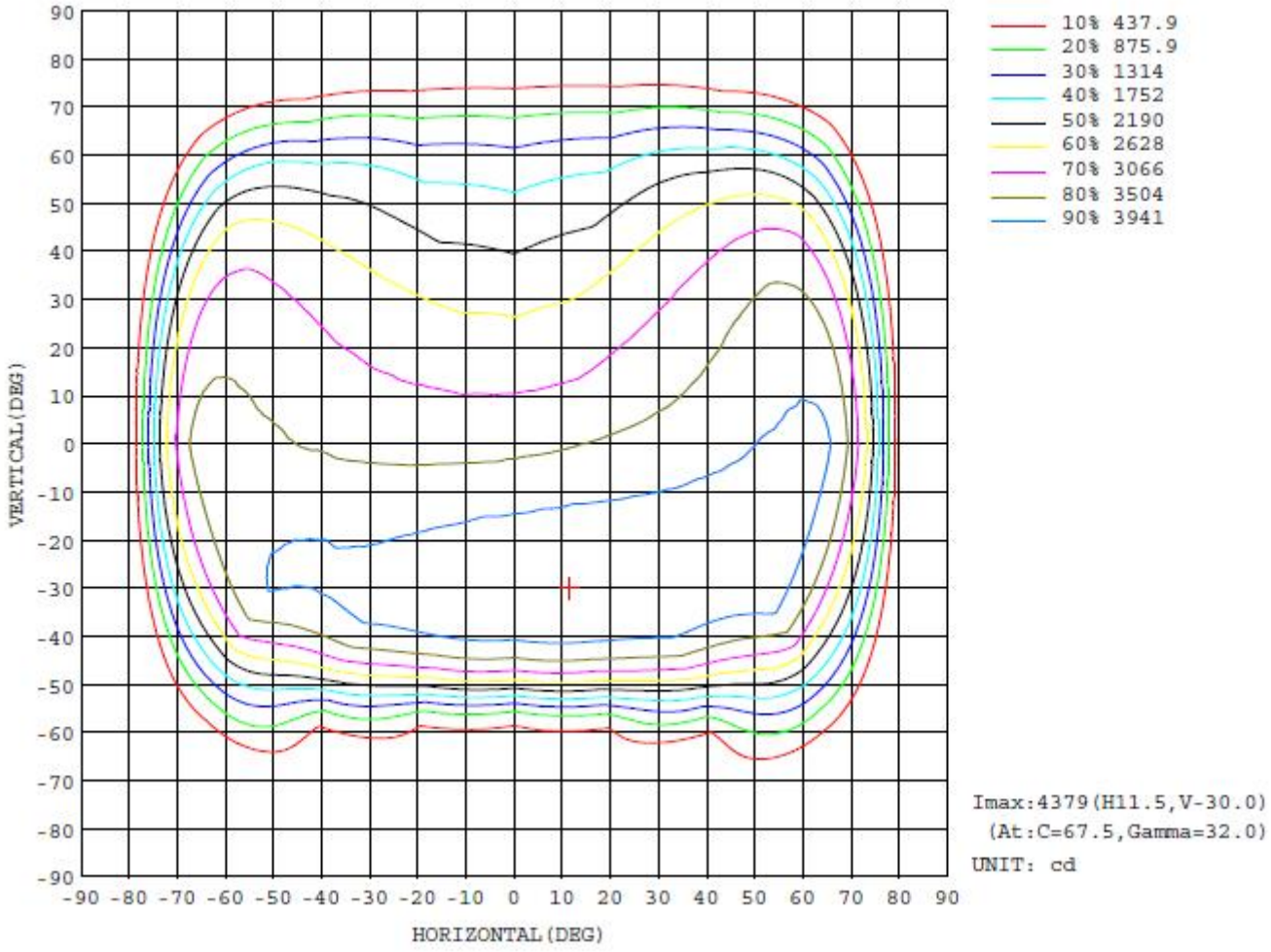
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5.3 Zonal Flux Diagram

γ	C0	C45	C90	C135	C180	C225	C270	C315	γ	Φ zone	Φ total	ŋlum,lamp
10	3459	3714	3776	3619	3373	3144	3074	3188	0- 10	325.0	325.0	2.53,2.53
20	3565	4014	4135	3854	3376	2981	2820	3054	10- 20	977.6	1303	10.2,10.2
30	3673	4240	4339	4052	3403	2850	2506	2998	20- 30	1619	2921	22.8,22.8
40	3796	4324	4000	4132	3468	2726	2170	2936	30- 40	2192	5113	39.8,39.8
50	3936	3959	2399	3736	3566	2563	1834	2827	40- 50	2562	7675	59.8,59.8
60	4082	2195	361.2	1881	3711	2228	1402	2521	50- 60	2439	10114	78.8,78.8
70	3377	265.3	116.9	225.9	3111	1315	702.0	1595	60- 70	1869	11983	93.4,93.4
80	265.4	30.54	4.675	20.61	186.4	187.9	133.0	254.6	70- 80	771.8	12755	99.4,99.4
90	7.528	1.566	0.6735	1.151	5.335	1.964	1.054	3.262	80- 90	48.78	12804	99.8,99.8
100	3.978	1.278	0.7106	1.147	5.029	1.069	0.7335	1.067	90-100	2.271	12806	99.8,99.8
110	4.095	1.971	1.392	2.544	7.019	2.961	0.9006	2.547	100-110	2.444	12808	99.8,99.8
120	4.288	2.730	2.156	3.199	7.167	5.235	2.621	4.926	110-120	3.474	12812	99.8,99.8
130	5.366	3.896	3.272	3.940	6.255	5.924	4.423	6.404	120-130	3.990	12816	99.9,99.9
140	6.175	4.685	4.983	4.757	6.019	6.415	7.042	7.227	130-140	4.231	12820	99.9,99.9
150	6.916	6.331	6.349	6.480	7.335	7.896	8.601	9.111	140-150	4.194	12824	99.9,99.9
160	7.926	7.477	7.604	6.974	8.949	9.449	9.826	10.20	150-160	3.734	12828	100,100
170	9.144	9.045	8.999	8.695	9.311	9.752	9.825	10.42	160-170	2.530	12831	100,100
180	10.46	10.36	9.824	9.601	10.63	10.61	9.825	10.02	170-180	0.9340	12832	100,100
DEG	LUMINOUS INTENSITY:cd									UNIT:lm		

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5.4 Isocandela Diagram



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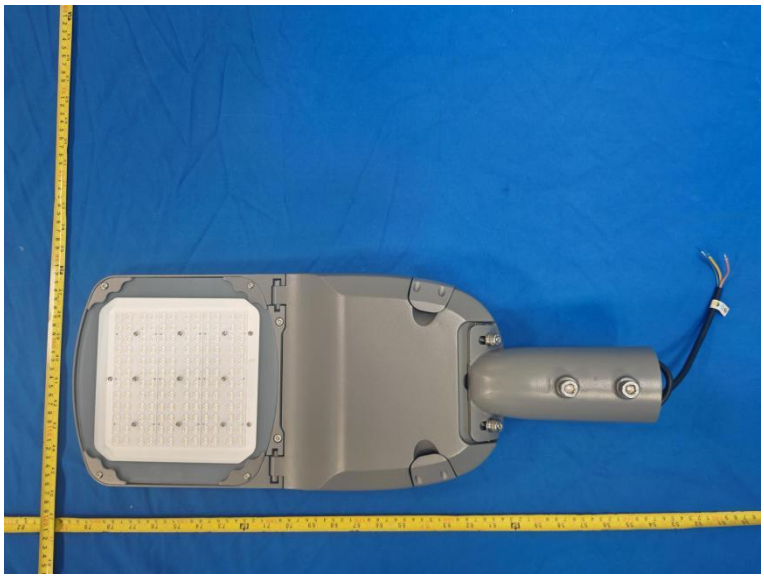
5.5 Luminous Distribution Intensity Data

Table--1 UNIT: cd

C(DEG) / γ (DEG)	0	22.5	45	67.5	90	112.5	135	157.5	180	202.5	225	247.5	270	292.5	315	337.5			
0	3397	3397	3393	3395	3392	3389	3386	3386	3397	3397	3393	3395	3392	3389	3386	3386			
5	3419	3487	3544	3577	3581	3557	3496	3440	3381	3316	3262	3228	3218	3242	3279	3335			
10	3459	3595	3714	3767	3776	3734	3619	3501	3373	3240	3144	3088	3074	3109	3188	3303			
15	3506	3704	3866	3955	3958	3898	3747	3559	3378	3190	3050	2975	2945	2998	3112	3279			
20	3565	3814	4014	4124	4135	4055	3854	3612	3376	3156	2981	2864	2820	2898	3054	3288			
25	3614	3906	4141	4269	4270	4185	3958	3669	3388	3126	2910	2742	2671	2790	3021	3305			
30	3673	3999	4240	4364	4339	4272	4052	3728	3403	3117	2850	2601	2506	2668	2998	3325			
35	3725	4094	4303	4365	4276	4269	4108	3796	3421	3114	2792	2461	2337	2541	2970	3358			
40	3796	4183	4324	4198	4000	4098	4132	3877	3468	3121	2726	2317	2170	2407	2936	3399			
45	3868	4252	4238	3779	3424	3665	4037	3967	3498	3143	2651	2161	2004	2261	2898	3450			
50	3936	4304	3959	2965	2399	2824	3736	4024	3566	3164	2563	1996	1834	2102	2827	3498			
55	4005	4284	3313	1694	1027	1532	3046	4004	3640	3171	2434	1806	1644	1912	2716	3525			
60	4082	4085	2195	547	361	491	1881	3794	3711	3127	2228	1566	1402	1673	2521	3498			
65	3999	3472	885	268	225	254	684	3133	3662	2967	1870	1230	1082	1338	2173	3316			
70	3377	2225	265	148	117	137	226	1925	3111	2491	1315	798	702	894	1595	2807			
75	2033	935	114	58.2	41.0	51.2	92.3	693	1691	1413	631	401	362	463	828	1734			
80	265	144	30.5	8.57	4.68	6.29	20.6	91.3	186	331	188	154	133	177	255	524			
85	43.2	20.7	3.46	1.24	1.06	1.15	2.05	10.7	28.1	55.7	56.4	40.2	32.0	53.4	76.4	78.6			
90	7.53	5.10	1.57	0.74	0.67	0.73	1.15	3.46	5.33	4.09	1.96	1.15	1.05	1.56	3.26	5.58			
95	4.29	3.12	1.30	0.84	0.69	0.71	1.10	2.55	4.60	2.97	1.12	1.00	0.89	0.96	1.23	3.66			
100	3.98	3.02	1.28	0.96	0.71	0.68	1.15	2.65	5.03	3.37	1.07	0.86	0.73	0.85	1.07	3.37			
105	4.04	2.99	1.40	1.08	0.73	0.66	1.72	3.12	6.02	4.68	1.73	0.81	0.68	0.83	1.56	4.36			
110	4.09	2.96	1.97	1.28	1.39	1.23	2.54	3.94	7.02	5.75	2.96	1.16	0.90	1.07	2.55	5.51			
115	4.15	3.61	2.63	1.64	1.47	1.64	2.71	4.27	7.06	6.46	4.36	2.14	1.64	2.06	3.79	6.58			
120	4.29	4.02	2.73	2.05	2.16	2.22	3.20	4.44	7.17	6.58	5.24	3.30	2.62	2.96	4.93	7.09			
125	4.53	4.08	3.12	2.78	2.70	2.79	3.94	4.83	6.67	6.49	5.43	3.87	3.36	3.37	5.58	7.15			
130	5.37	4.19	3.90	3.61	3.27	3.29	3.94	5.19	6.25	6.16	5.92	5.27	4.42	4.53	6.40	7.20			
135	5.51	4.62	4.19	4.03	3.93	4.03	4.25	5.42	6.12	6.22	6.04	6.26	6.22	6.17	6.89	7.26			
140	6.17	5.25	4.68	5.26	4.98	5.26	4.76	6.41	6.02	6.29	6.42	6.91	7.04	7.32	7.23	7.32			
145	6.59	5.67	5.26	5.60	5.48	5.76	5.41	6.66	6.43	6.57	7.00	7.66	7.46	8.39	8.12	7.86			
150	6.92	6.40	6.33	6.42	6.35	6.49	6.48	6.79	7.33	7.31	7.90	9.39	8.60	9.71	9.11	8.39			
155	7.58	7.06	6.90	7.00	6.79	6.66	6.74	6.98	8.24	8.21	9.05	10.0	9.83	10.2	9.52	9.12			
160	7.93	7.64	7.48	7.74	7.60	7.24	6.97	7.81	8.95	9.04	9.45	10.3	9.83	10.2	10.2	9.33			
165	8.48	7.98	7.98	8.06	8.10	7.98	7.80	8.13	9.21	9.27	9.57	10.4	9.83	10.3	10.3	9.53			
170	9.14	9.02	9.05	9.21	9.00	8.79	8.69	9.12	9.31	9.44	9.75	10.4	9.83	10.4	10.4	9.62			
175	10.3	9.77	9.95	9.79	9.74	9.70	9.51	9.61	10.2	10.2	10.4	10.4	9.82	10.4	10.4	9.67			
180	10.5	10.7	10.4	9.79	9.82	9.95	9.60	9.70	10.6	10.5	10.6	10.2	9.82	9.79	10.0	9.70			

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6. Photo of sample

Photo document
Photos of STL-80W   3

----- End of test report -----

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