



TEST REPORT

Of IES LM-79-08

Kunde: <i>Client:</i>	MIC Optoelectronic Co., Ltd
Adresse: <i>Address:</i>	2nd floor,Third Building, 97# AiNan Road,LongDong, BaoLong Street, LongGang District, Shenzhen, China
Hersteller: <i>Manufacturer:</i>	MIC Optoelectronic Co., Ltd
Adresse: <i>Address:</i>	2nd floor,Third Building, 97# AiNan Road,LongDong, BaoLong Street, LongGang District, Shenzhen, China
Name der Marke: <i>Brand Name:</i>	MIC
Beschreibung des Produkts: <i>Product Description:</i>	LED Street Light
Modelle: <i>Models:</i>	MSL-F150
Bewertung: <i>Rating:</i>	AC100-240V, 50/60Hz, 150W
Verfahren: <i>Method:</i>	IES LM-79-08: Approved Method for Electrical and Photometric Measurements of Solid-State Lighting Products
Prüfergebnis*: <i>Test result*:</i>	Please see the following test data

Datum der Prüfung: <i>Date of Test:</i>	Datum der Emission: <i>Date of Issue:</i>	Klassifizierung: <i>Classification:</i>	Gegenstand der Prüfung: <i>Test item:</i>
2023-12-06~2023-12-08	2023-12-11	Commission Test	IES LM-79-08

Prüflabor (Testlabor) / Testing Laboratory:

Shenzhen Southern LCS Compliance Testing Laboratory Ltd.

Add: 101-201, No.39 Buliding, Xialang Industrial Zone, Heshuikou Community, Matian Street Guangming New District, Shenzhen,Guangdong Prov. 518000 China.

Compiled von/Compiled by: Zero Huang Zero Huang/ Project Engineer	Check von/Check by: Jan Luo Ian Luo/ Director	Genehmigt von/Approved by: Jesse Liu Jesse Liu/ Manager
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Table of Contents

1. Test Method	3
2. Product Information	4
3. Test equipment list	4
4. Integrating Sphere Test Results	5
4.1 Test Data	5
4.2 Spectrum	5
5. Goniophotometer Test results	6
5.1 Test Data	6
5.2 Luminous Intensity Distribution Diagram and C0 Plane Isolux Diagram (Unit : lx)	6
5.3 Zonal Flux Diagram	7
5.4 Isocandela Diagram	8
5.5 Luminous Distribution Intensity Data	9
6. Photo of sample	10





1. Test Method

Test Item.....	Integrating Sphere Test
Ambient Condition.....	24.9℃
Stabilization time(h):	0.5h
Orientation(burning position) of SSL product during test	down
Test Method	The sample was tested according to the IES LM-79-2008. 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.....	24.9℃
Total operated time of the product for measurements including stabilization..... (h):	1.0h
Orientation(burning position) of SSL product during test	down
Test Method.....	The sample was tested according to the IES LM-79-2008. Photometric parameters 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.





2. Product Information

Product description.....:	LED Street Light
Model Number.....:	MSL-F150
Rated Inputs.....:	AC100-240V
Rated Power.....:	150W
Declared CCT.....:	6000K
LED Manufacturer.....:	N/A
LED Model.....:	N/A
Forward current of the LED chip.....:	N/A
Date of Receipt Samples.....:	December 06, 2023
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	2023/06/15	2024/06/14
EVERFINE	Digital Power Meter	SLCS-S-103	PF2010	2023/06/15	2024/06/14
EVERFINE	AC Testing Power Source	SLCS-S-115	DPS1060	2023/06/15	2024/06/14
EVERFINE	Total Spectral Radiant Flux Standard Lamp	SLCS-S-143	D908S	2023/07/05	2024/07/04
EVERFINE	2 Meter Integrating Sphere	SLCS-S-312	HAAS2000	2023/06/15	2024/06/14
EVERFINE	Digital Power Meter	SLCS-S-309	PF9810	2023/06/15	2024/06/14
EVERFINE	AC Testing Power Source	SLCS-S-310	DPS1005	2023/06/15	2024/06/14
EVERFINE	DC Testing Power Source	SLCS-S-311	WY605	2023/06/15	2024/06/14
OSRAM	Standard Lamp	SLCS-S-313	DC24V/50W	2023/07/05	2024/07/04



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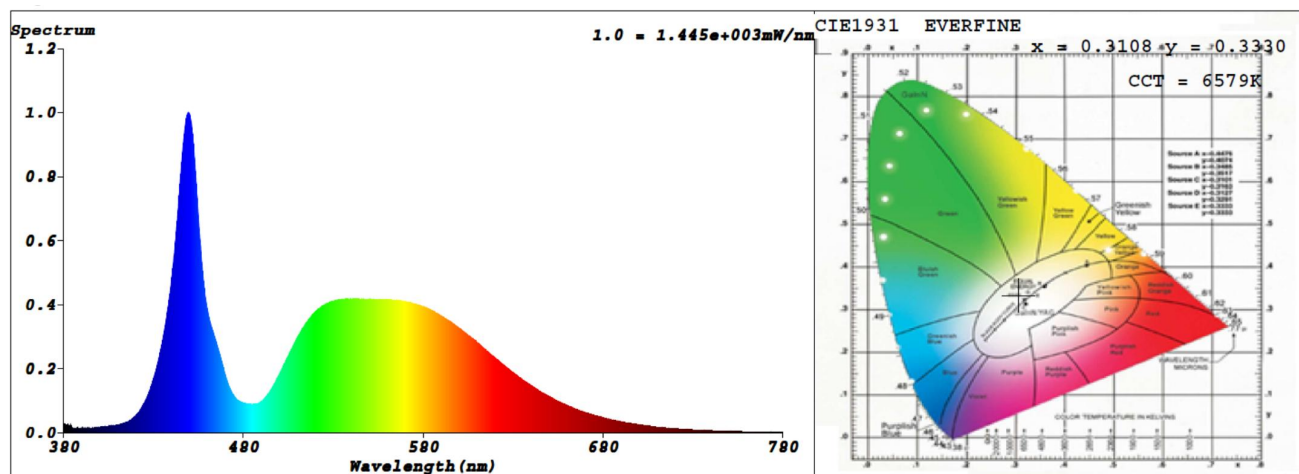
4. Integrating Sphere Test Results

4.1 Test Data

Test type	Voltage (V AC)	Frequency (Hz)	Current (A)	Power Factor	Power (W)
Input	229.99	49.99	0.6573	0.9843	148.8

Test type	CCT (K)	CRI	Duv	Luminous flux (lm)	Luminous efficacy(lm/W)
Output	6579	71.8	6.22e-03	25065	168.45

4.2 Spectrum



Colorimetric Parameters

Chromaticity Coordinate: $x = 0.3108$ $y = 0.3330$ / $u' = 0.1950$ $v' = 0.4702$ ($duv=6.22e-03$) $Dx, Dy: -0.0016, 0.0105$

CCT= 6579K Prcp WL: $L_d=491.5nm$ Purity=7.7%

Peak WL: $L_p=450nm$ FWHM: $=17.0nm$ Ratio: $R=11.7\%$ $G=84.4\%$ $B=3.9\%$

Render Index: $R_a = 71.8$

R1 =69 R2 =75 R3 =79 R4 =73 R5 =71 R6 =67 R7 =81
R8 =59 R9 =-38 R10=41 R11=71 R12=40 R13=70 R14=88 R15=63
LEVEL:OUT





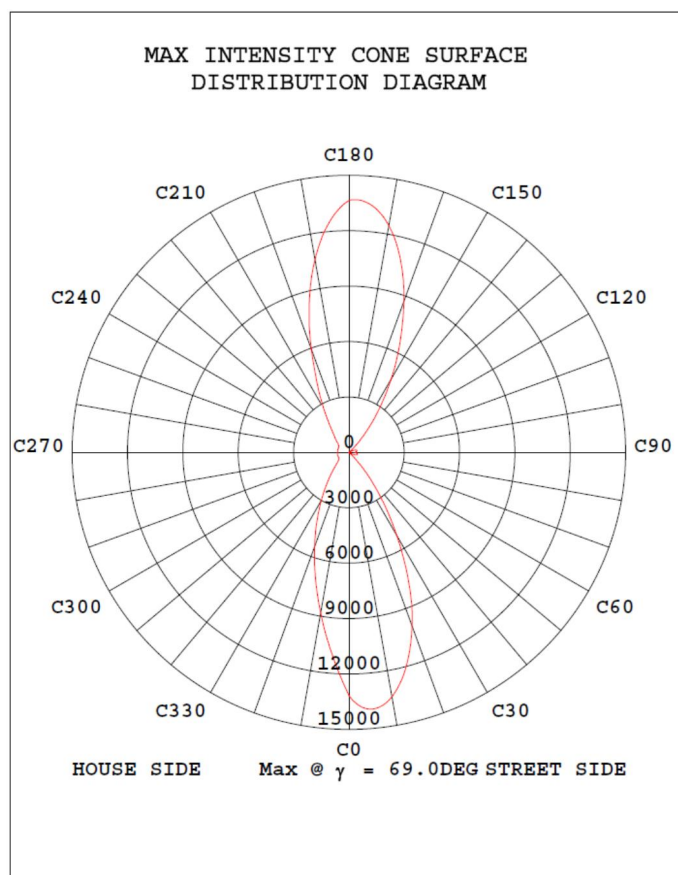
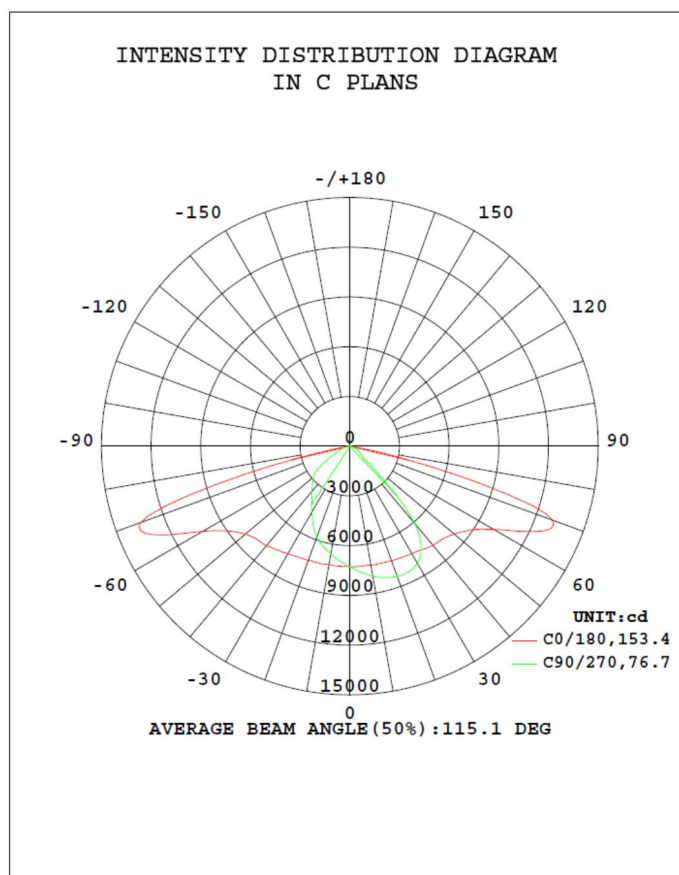
5. Goniophotometer Test results

5.1 Test Data

Test type	Voltage (V AC)	Frequency (Hz)	Current (A)	Power Factor	Power (W)
Input	230.0	50.01	0.6571	0.9843	148.7

Test type	Total Flux (lm)	Luminous efficacy(lm/W)	I _{max} (cd)	ZL (0~90°)	ZL (80~90°)
Output	25076.4	168.60	13641	99.8%	0.3%

5.2 Luminous Intensity Distribution Diagram and C0 Plane Isolux Diagram (Unit : lx)



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5.3 Zonal Flux Diagram

γ	C0	C45	C90	C135	C180	C225	C270	C315	γ	Φ zone	Φ total	Φ lum, lamp
10	728.1	779.3	795.8	778.4	725.5	680.1	660.3	679.3	0- 10	694.9	694.9	2.77, 2.77
20	735.2	819.4	836.1	820.4	731.9	636.5	581.4	640.6	10- 20	2062	2757	11, 11
30	747.1	846.1	815.0	839.8	750.0	595.1	460.7	599.6	20- 30	3317	6075	24.2, 24.2
40	780.1	827.5	612.7	805.1	785.0	534.5	359.1	538.9	30- 40	4305	10379	41.4, 41.4
50	823.9	709.5	107.8	654.1	824.3	428.5	286.4	430.3	40- 50	4603	14982	59.7, 59.7
60	1004	205.3	66.58	97.29	1027	288.2	145.6	290.5	50- 60	4270	19252	76.8, 76.8
70	1300	44.20	28.06	40.43	1345	88.41	57.30	87.69	60- 70	3947	23200	92.5, 92.5
80	66.09	8.266	2.983	6.799	76.98	23.67	21.60	24.43	70- 80	1742	24942	99.5, 99.5
90	1.181	0.2178	0.0629	0.0876	1.110	0.0951	0.0526	0.1310	80- 90	81.77	25024	99.8, 99.8
100	1.110	0.1385	0.0526	0.0699	1.453	0.1130	0.0614	0.0964	90-100	3.719	25027	99.8, 99.8
110	1.230	0.2074	0.0876	0.2009	1.810	0.5204	0.1054	0.3421	100-110	5.077	25032	99.8, 99.8
120	1.212	0.4241	0.2280	0.4367	1.886	0.8828	0.2289	0.7779	110-120	6.693	25039	99.9, 99.9
130	1.204	0.6924	0.5609	0.6902	1.356	1.031	0.4492	0.9530	120-130	7.181	25046	99.9, 99.9
140	1.374	1.012	0.8857	0.9340	1.153	1.168	0.9920	1.277	130-140	7.522	25054	99.9, 99.9
150	1.528	1.375	1.297	1.276	1.350	1.490	1.518	1.713	140-150	8.071	25062	99.9, 99.9
160	1.656	1.575	1.587	1.502	1.716	1.869	2.044	2.028	150-160	7.445	25069	100, 100
170	1.945	1.930	1.886	1.800	1.828	1.921	2.123	2.124	160-170	5.157	25074	100, 100
180	2.194	2.232	2.123	2.063	2.211	2.190	2.123	2.097	170-180	1.944	25076	100, 100
DEG	LUMINOUS INTENSITY: $\times 10\text{cd}$									UNIT: lm		



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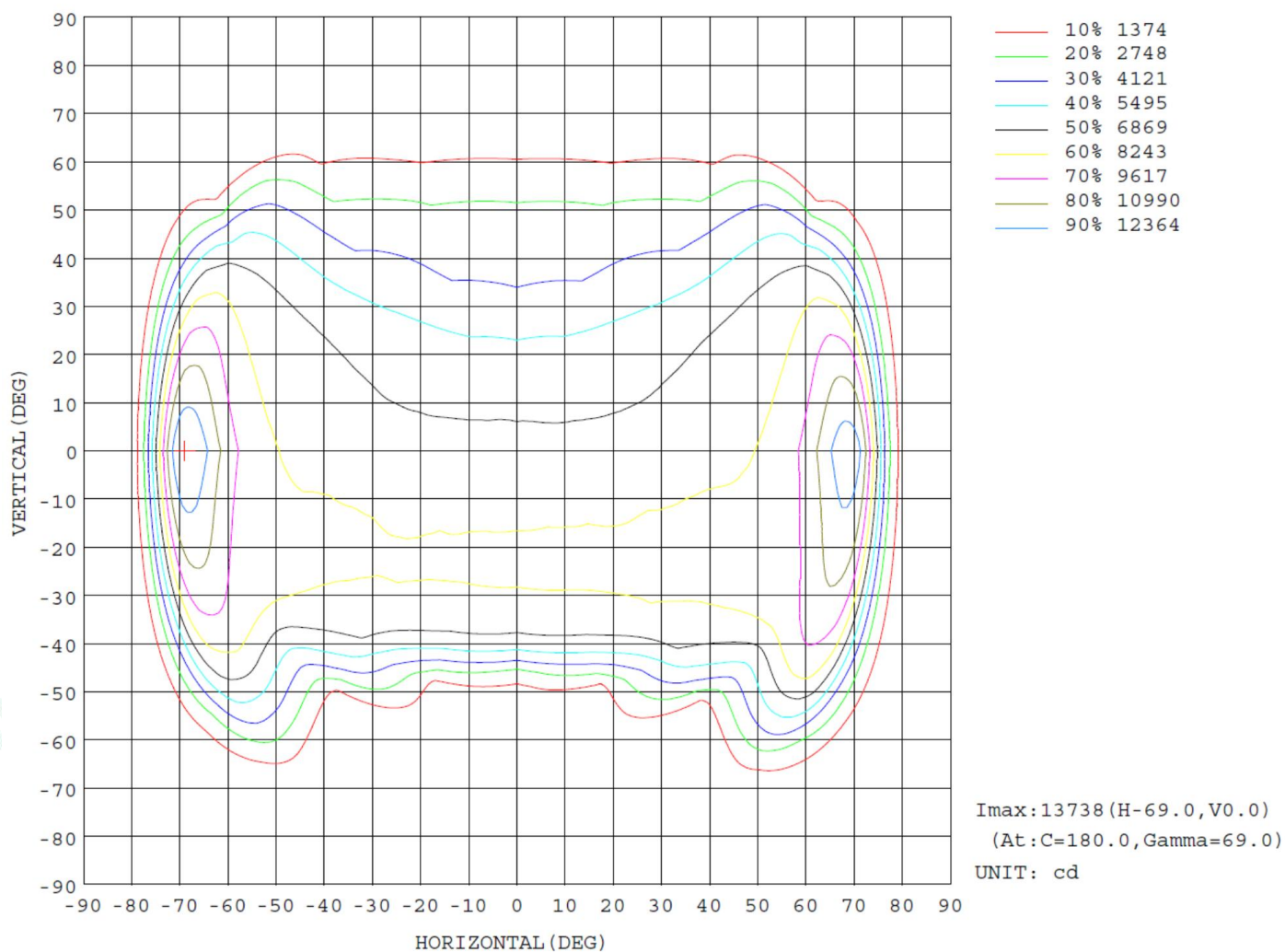
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5.4 Isocandela Diagram





5.5 Luminous Distribution Intensity Data

Table--1

UNIT: $\times 10\text{cd}$

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	727	727	727	727	727	727	727	727	727	727	727	727	727	727	727	727			
5	728	741	751	760	763	759	751	738	726	714	702	697	695	696	704	715			
10	728	757	779	792	796	791	778	754	725	702	680	666	660	665	679	702			
15	731	772	801	818	821	816	802	770	730	692	655	634	625	633	659	693			
20	735	787	819	833	836	831	820	783	732	682	637	599	581	599	641	685			
25	741	803	834	840	838	837	833	796	738	678	616	552	525	555	621	683			
30	747	824	846	828	815	822	840	815	750	679	595	497	461	499	600	685			
35	761	846	848	785	750	776	832	841	764	689	569	438	401	439	573	694			
40	780	872	827	697	613	678	805	863	785	702	534	386	359	387	539	708			
45	792	884	791	499	302	457	759	868	794	717	489	343	319	343	491	725			
50	824	900	709	178	108	129	654	876	824	726	428	302	286	302	430	734			
55	882	905	533	81.2	83.6	80.9	430	862	893	728	365	252	230	251	367	736			
60	1004	887	205	66.2	66.6	64.5	97.3	834	1027	717	288	167	146	165	290	719			
65	1218	917	62.8	49.0	49.0	48.5	59.0	841	1267	662	187	86.7	84.7	86.4	187	662			
70	1300	848	44.2	31.7	28.1	32.9	40.4	717	1345	427	88.4	56.2	57.3	57.8	87.7	413			
75	651	355	25.0	15.0	12.7	14.6	22.0	268	674	73.8	40.0	38.0	38.6	38.6	40.8	70.1			
80	66.1	55.0	8.27	3.95	2.98	3.63	6.80	38.1	77.0	26.2	23.7	21.0	21.6	21.3	24.4	26.6			
85	7.94	4.85	0.86	0.51	0.52	0.51	0.52	3.07	6.77	6.79	12.2	6.11	4.75	6.54	11.8	7.63			
90	1.18	0.89	0.22	0.08	0.06	0.07	0.09	0.57	1.11	0.48	0.10	0.09	0.05	0.10	0.13	0.59			
95	0.97	0.61	0.14	0.06	0.05	0.05	0.07	0.39	1.17	0.65	0.09	0.07	0.05	0.07	0.09	0.65			
100	1.11	0.59	0.14	0.06	0.05	0.05	0.07	0.38	1.45	0.99	0.11	0.07	0.06	0.07	0.10	0.90			
105	1.20	0.67	0.15	0.06	0.05	0.05	0.14	0.56	1.69	1.28	0.26	0.09	0.08	0.10	0.17	1.16			
110	1.23	0.69	0.21	0.15	0.09	0.08	0.20	0.77	1.81	1.41	0.52	0.12	0.11	0.11	0.34	1.35			
115	1.18	0.76	0.28	0.19	0.15	0.14	0.32	0.85	1.92	1.64	0.79	0.17	0.14	0.17	0.59	1.54			
120	1.21	0.81	0.42	0.29	0.23	0.22	0.44	0.86	1.89	1.63	0.88	0.35	0.23	0.29	0.78	1.57			
125	1.20	0.83	0.54	0.44	0.40	0.37	0.56	0.97	1.56	1.51	0.89	0.47	0.33	0.32	0.82	1.48			
130	1.20	0.96	0.69	0.61	0.56	0.50	0.69	1.02	1.36	1.28	1.03	0.72	0.45	0.51	0.95	1.39			
135	1.24	1.03	0.84	0.79	0.68	0.69	0.75	1.10	1.14	1.15	1.10	0.93	0.78	0.72	1.11	1.39			
140	1.37	1.22	1.01	0.96	0.89	0.91	0.93	1.30	1.15	1.19	1.17	1.09	0.99	1.13	1.28	1.41			
145	1.49	1.32	1.16	1.15	1.07	1.11	1.12	1.31	1.20	1.24	1.29	1.43	1.24	1.50	1.46	1.49			
150	1.53	1.42	1.38	1.33	1.30	1.25	1.28	1.33	1.35	1.40	1.49	1.73	1.52	1.77	1.71	1.62			
155	1.64	1.56	1.52	1.50	1.42	1.38	1.42	1.41	1.55	1.58	1.73	1.92	1.86	1.95	1.84	1.77			
160	1.66	1.65	1.58	1.60	1.59	1.49	1.50	1.49	1.72	1.73	1.87	2.00	2.04	2.03	2.03	1.89			
165	1.82	1.76	1.72	1.77	1.74	1.61	1.63	1.65	1.74	1.78	1.87	2.03	2.04	2.07	2.05	1.91			
170	1.95	1.95	1.93	1.93	1.89	1.79	1.80	1.83	1.83	1.86	1.92	2.10	2.12	2.10	2.12	1.96			
175	2.16	2.11	2.12	2.09	2.10	2.01	2.00	2.01	2.03	2.06	2.09	2.22	2.12	2.10	2.12	2.06			
180	2.19	2.18	2.23	2.10	2.12	2.18	2.06	2.21	2.21	2.22	2.19	2.22	2.12	2.10	2.10	2.05			



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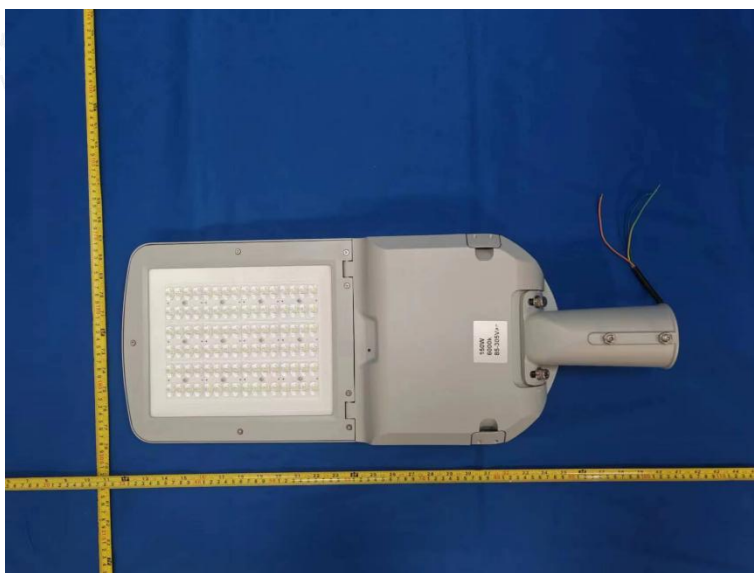
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6. Photo of sample

Photo document

Photos of MSL-F150



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

