




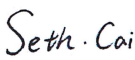
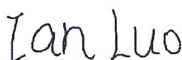

LM-79-08 TEST REPORT

Applied for SASO-2927

Kunde: <i>Client:</i>	AOK Industrial Company Limited
Adresse: <i>Address:</i>	Building 1, Shengzuozhi Technology Industrial Park, Shajing Street, Shenzhen City, Guangdong, P.R. China
Hersteller: <i>Manufacturer:</i>	AOK Industrial Company Limited
Adresse: <i>Address:</i>	Building 1, Shengzuozhi Technology Industrial Park, Shajing Street, Shenzhen City, Guangdong, P.R. China
Name der Marke: <i>Brand Name:</i>	
Beschreibung des Produkts: <i>Product Description:</i>	LED STREET LIGHT
Modelle: <i>Models:</i>	AOK-200WiL02-NV-L3-00-40
Bewertung: <i>Rating:</i>	AC120-277V, 50/60Hz, 200W, 2200mA
Verfahren: <i>Method:</i>	SASO 2927: 2019:Energy efficiency functionality and labelling requirements for lighting products – Part 3: Street lighting LM-79-08: Approved Method for Electrical and Photometric Measurements of Solid-State Lighting Products
Prüfergebnis*: <i>Test result*:</i>	

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>
2021-06-16--2021-06-21	2021-09-03	Commission Test	IES LM-79-08

Prüflabor (Testlabor) / Testing Laboratory:
Shenzhen Southern LCS Compliance Testing Laboratory Ltd.

Test von/Prepare by:  Seth Cai/ Project Engineer	Check von/Check by:  Ian Luo/ Director	Genehmigt von/Approved by:  Jesse Liu/ Manager
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Dieser Prüfbericht bezieht sich nur auf das o.g. Prüfmuster und darf ohne Genehmigung der Prüfstelle nicht auszugsweise vervielfältigt werden. Dieser Bericht berechtigt nicht zur Verwendung eines Prüfzeichens.

Remark: The duplication of this report or parts of it and its use for advertising purposes is only allowed with permission of the testing laboratory. This report contains the result of examination of the product sample submitted by the appliance. A general statement concerning the quality of the products from the series manufacturer cannot be derived therefore.

Shenzhen Southern LCS Compliance Testing Laboratory Ltd.

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1. Test Method

Test Item.....:	Integrating Sphere Test
Ambient Condition	25.1°C
Stabilization time(h):	0.5h
Orientation(burning position) of SSL product during test	down
Test Method	<p>The sample was tested according to the LM-79-2008.</p> <p>The sample measurements were made using a spectroradiometer connected by a fiber optic cable and detector through the detector port of the integrating sphere. The sample was 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.</p>
Test Item.....:	Goniophotometer Test
Ambient Condition.....:	25.1°C
Total operated time of the product for measurements including stabilization..... (h):	1.0h
Orientation(burning position) of SSL product during test	down
Test Method.....:	<p>The sample was tested according to the LM-79-2008.</p> <p>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.</p>



2. Test equipment list

Manufacturer	Description	Equipment ID	Model	Calibration Date	Calibration Due Date
EVERFINE	Full-field Speed Goniophotometer	SLCS-S-112	GO-R5000	2020/07/02	2021/07/01
EVERFINE	Digital Power Meter	SLCS-S-103	PF2010	2020/06/24	2021/06/23
EVERFINE	AC Testing Power Source	SLCS-S-115	DPS1060	2020/06/24	2021/06/23
EVERFINE	Total Spectral Radiant Flux Standard Lamp	SLCS-S-143	D908S	2020/07/02	2021/07/01
SENSING	2 Meter Integrating Sphere	SLCS-S-038	SPR-3000	2020/07/02	2021/07/01
YOKOGAWA	Digital Power Meter	SLCS-S-058	WT310	2020/06/24	2021/06/23
ALL POWER ELECTRONIC	AC Testing Power Source	SLCS-S-111	APW-105N	2020/06/24	2021/06/23
SENSING	Standard Lamp	SLCS-S-118	S11010017	2020/07/02	2021/07/01



3. Integrating Sphere Test Results

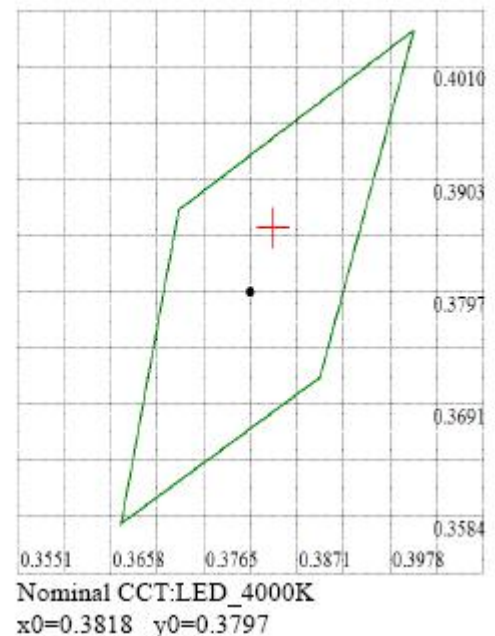
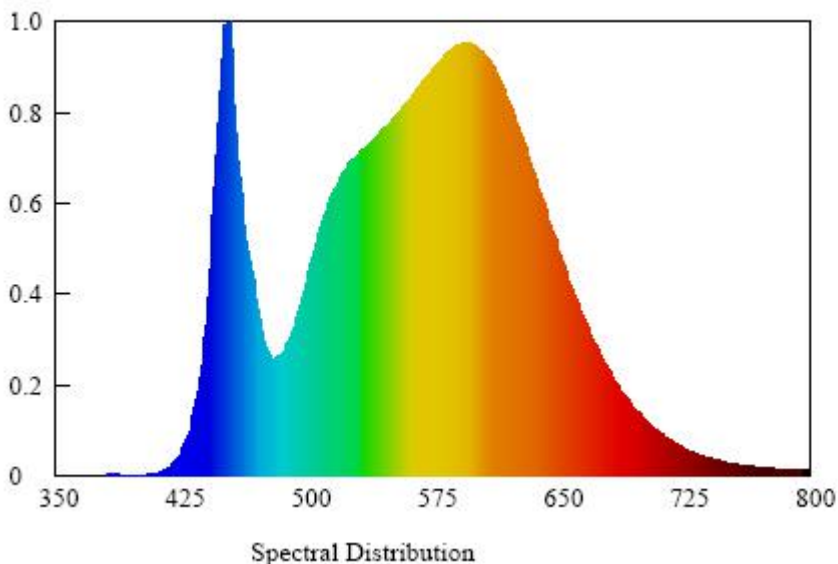
4.1 Test Data

Test type	Voltage (V AC)	Frequency (Hz)	Current (A)	Power Factor	Power (W)
Input	119.97	60	1.6800	0.9990	200.31

Test type	CCT (K)	CRI	Luminous flux (lm)	Luminous efficacy(lm/W)
Output	3960	82.9	29337.49	146.5

4.2 Spectrum

Spectroradiometric Parameters



Chromaticity Coordinates: $x=0.3844$ $y=0.3857$ $u'=0.2242$ $v'=0.5061$

Correlated Color Temperature: 3960 K

Dominant Wavelength: 576.0 nm(E)

Colour Fidelity Index: $R_f=82$

Gamut Index: $R_g=94$

Luminous Flux: 29337.49 lm

Purity: 0.3111

Chromaticity Difference: +0.003Duv

Peak Wavelength: 455.0 nm

Color Ratio: $K_r=37.8\%$ $K_g=52.8\%$ $K_b=9.3\%$

Bandwidth: 26.4nm

Radiant Flux: 88.944 W

Photosynthetically Active Radiation(PAR): 86.82W

Photosynthetic Photon Flux(PPF):410.56 μ mol/s

Rendering Index: $R_a=82.9$

$R_1=81$ $R_2=89$ $R_3=95$ $R_4=82$ $R_5=80$ $R_6=84$ $R_7=87$ $R_8=65$

$R_9=9$ $R_{10}=73$ $R_{11}=81$ $R_{12}=57$ $R_{13}=84$ $R_{14}=97$ $R_{15}=75$ $R_e=76$



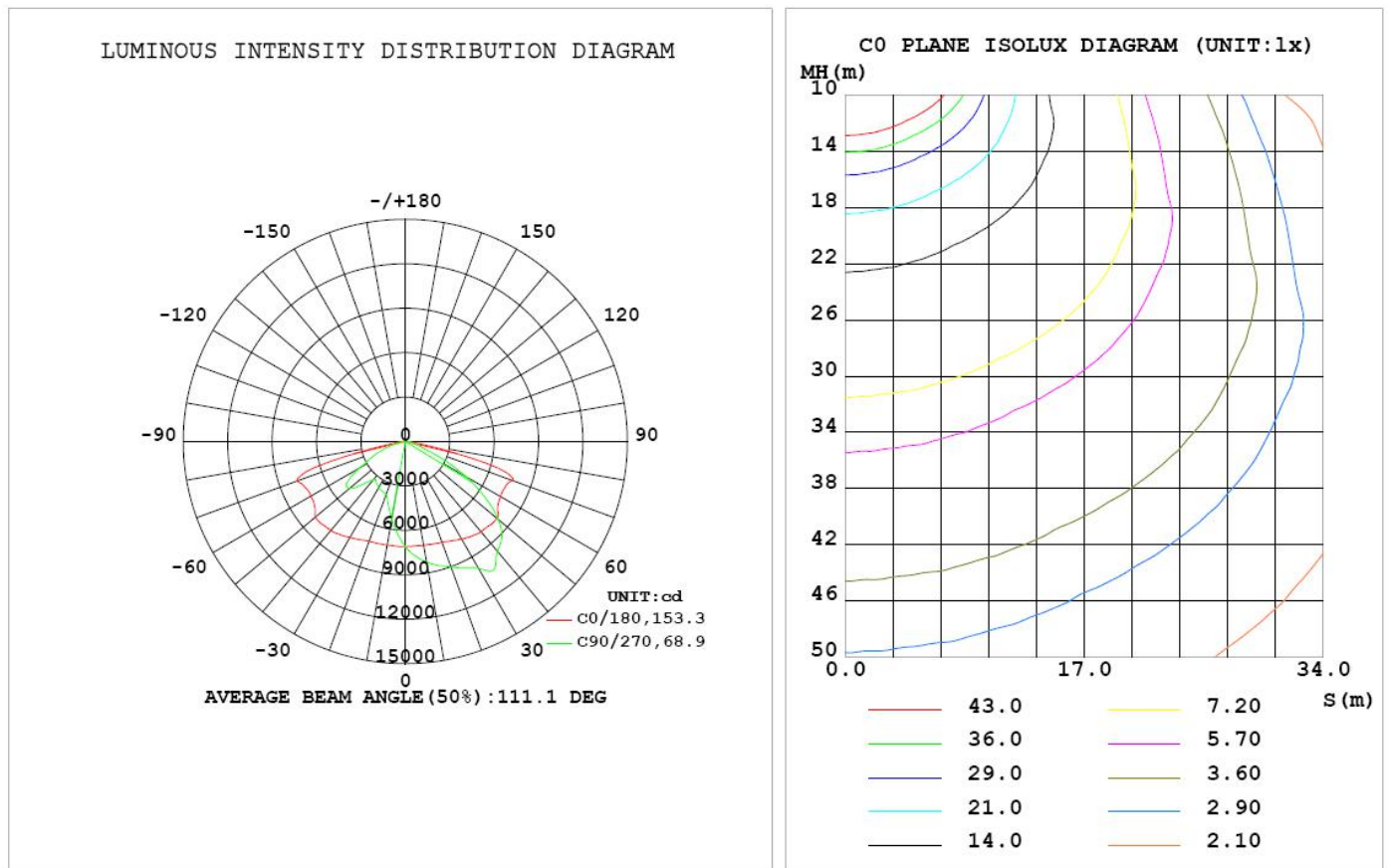
4. Goniophotometer Test results

5.1 Test Data

Test type	Voltage (V AC)	Frequency (Hz)	Current (A)	Power Factor	Power (W)
Input	120.15	60	1.6723	0.9988	200.69

Test type	Total Flux (lm)	Luminous efficacy(lm/W)	I _{max} (cd)	Spacing Criteria (0~180°)	Spacing Criteria (90~270°)
Output	29732.00	148.15	10836	1.67	0.62

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



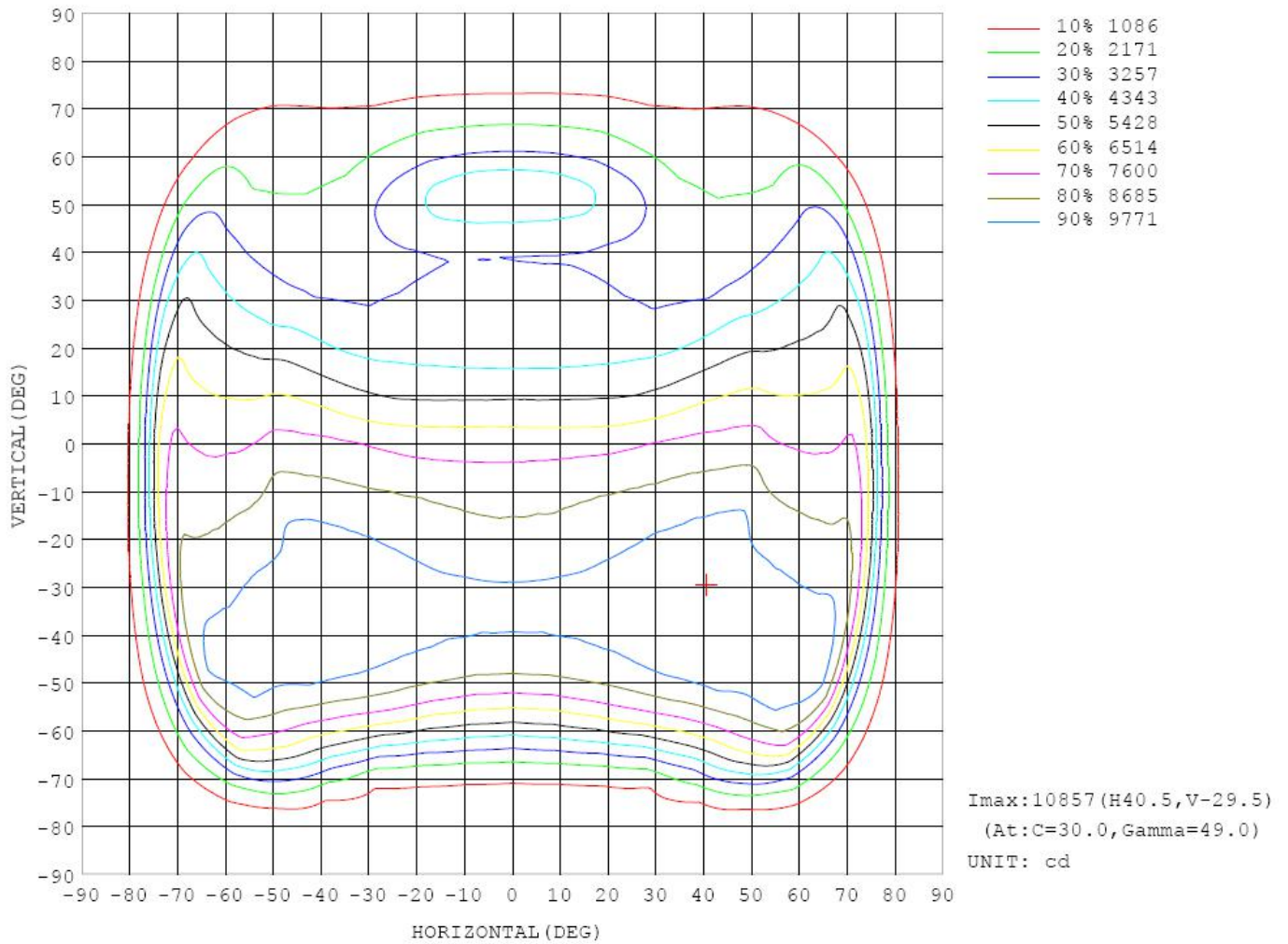


5.3 Zonal Flux Diagram

γ	C0	C45	C90	C135	C180	C225	C270	C315	γ	Φ zone	Φ total	%lum, lamp
10	712.1	800.7	825.9	800.5	710.0	581.3	530.6	582.1	0- 10	668.4	668.4	2.25,2.25
20	721.7	880.8	902.0	882.0	716.7	458.3	383.7	462.3	10- 20	1932	2601	8.75,8.75
30	760.4	961.5	990.5	961.6	748.3	376.9	358.9	373.2	20- 30	3149	5750	19.3,19.3
40	794.8	1054	969.2	1058	784.1	323.3	334.8	320.9	30- 40	4413	10163	34.2,34.2
50	808.6	1056	819.5	1051	793.5	292.0	494.0	283.4	40- 50	5442	15605	52.5,52.5
60	742.3	958.8	471.1	949.2	737.5	240.8	355.6	236.0	50- 60	5853	21458	72.2,72.2
70	768.4	617.5	119.3	599.8	779.3	162.6	159.0	161.0	60- 70	4991	26449	89,89
80	127.7	120.6	34.69	116.1	117.4	62.13	21.14	63.02	70- 80	2920	29368	98.8,98.8
90	1.998	2.165	0.8737	1.604	1.881	1.479	0.3093	1.263	80- 90	289.9	29658	99.8,99.8
100	1.251	0.6399	0.3087	0.4362	1.329	1.132	0.3192	1.085	90-100	10.69	29669	99.8,99.8
110	1.131	0.4989	0.4376	0.3808	1.529	1.711	0.8467	1.659	100-110	9.674	29679	99.8,99.8
120	1.189	0.5316	0.6608	0.4257	1.551	1.958	1.411	2.062	110-120	11.53	29690	99.9,99.9
130	1.193	0.6702	0.8087	0.5073	1.163	1.551	1.518	1.798	120-130	10.81	29701	99.9,99.9
140	1.353	0.8882	0.9074	0.6907	1.109	1.440	1.537	1.670	130-140	9.074	29710	99.9,99.9
150	1.520	1.193	1.043	0.9823	1.275	1.706	1.785	1.813	140-150	8.167	29718	100,100
160	1.661	1.456	1.290	1.250	1.576	1.897	1.908	1.862	150-160	7.016	29725	100,100
170	1.829	1.781	1.575	1.537	1.727	1.984	2.018	1.973	160-170	4.786	29730	100,100
180	2.027	2.043	1.943	1.818	2.035	2.031	1.959	1.854	170-180	1.790	29732	100,100
DEG	LUMINOUS INTENSITY:×10cd									UNIT:lm		



5.4 Isocandela Diagram





5.5 Luminous Distribution Intensity Data

Table--2

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

γ \ C (DEG)	190	200	210	220	230	240	250	260	270	280	290	300	310	320	330	340	350		
0	710	710	710	710	710	710	710	710	710	710	710	710	710	710	710	710	710		
5	695	682	669	656	645	637	629	626	624	626	630	637	645	655	669	682	696		
10	680	650	621	593	570	552	539	532	531	533	541	553	570	594	623	652	684		
15	666	615	569	529	500	477	460	448	445	450	461	480	502	534	574	620	669		
20	649	577	521	476	440	412	395	387	384	386	394	411	443	482	528	586	655		
25	634	545	483	429	393	380	376	373	370	369	370	374	390	433	491	556	647		
30	625	523	447	386	368	367	366	361	359	358	360	361	362	384	456	537	644		
35	627	507	408	354	346	345	348	344	342	342	343	341	342	351	417	524	648		
40	636	493	371	327	319	322	326	331	335	328	321	320	317	325	377	514	657		
45	638	480	345	304	296	329	374	404	411	399	366	316	290	301	348	500	656		
50	631	459	324	285	299	373	448	489	494	480	437	360	286	281	325	484	652		
55	593	418	291	262	293	371	445	475	478	470	441	367	283	259	296	450	614		
60	575	392	264	234	248	298	342	356	356	357	344	299	242	230	267	419	590		
65	567	372	240	207	195	220	243	248	250	251	244	217	192	205	243	396	568		
70	580	356	214	173	153	151	162	161	159	164	164	150	152	170	218	373	565		
75	394	260	174	135	104	86.2	87.2	83.2	80.7	85.6	90.5	87.8	102	133	172	279	406		
80	82.3	69.5	76.6	73.6	50.7	34.3	27.6	22.2	21.1	24.1	30.4	37.0	53.4	72.6	78.7	84.6	105		
85	12.2	11.8	13.1	15.0	10.8	6.55	3.59	1.48	0.70	1.88	4.62	8.10	13.0	17.2	17.1	18.5	21.9		
90	1.56	2.53	1.24	2.33	0.63	0.44	0.46	0.33	0.31	0.36	0.42	0.57	1.01	1.52	1.83	2.10	2.25		
95	1.50	1.51	1.38	1.06	0.69	0.42	0.32	0.28	0.27	0.29	0.34	0.46	0.69	1.06	1.41	1.74	1.65		
100	1.54	1.68	1.62	1.32	0.94	0.63	0.44	0.35	0.32	0.36	0.44	0.61	0.90	1.27	1.57	1.67	1.59		
105	1.66	1.82	1.78	1.57	1.25	0.95	0.71	0.59	0.55	0.58	0.70	0.91	1.20	1.52	1.77	1.87	1.75		
110	1.83	2.06	2.04	1.82	1.60	1.30	1.05	0.90	0.85	0.89	1.02	1.24	1.50	1.82	2.07	2.13	1.95		
115	1.90	2.10	2.15	2.06	1.84	1.50	1.32	1.21	1.15	1.17	1.29	1.53	1.79	2.07	2.18	2.23	2.04		
120	1.82	2.05	2.18	2.07	1.85	1.66	1.48	1.41	1.41	1.47	1.53	1.67	1.92	2.20	2.22	2.20	2.01		
125	1.54	1.82	1.95	1.87	1.66	1.57	1.46	1.43	1.51	1.57	1.46	1.70	1.84	2.01	2.08	1.97	1.80		
130	1.39	1.55	1.56	1.54	1.56	1.50	1.47	1.39	1.52	1.58	1.42	1.69	1.80	1.80	1.79	1.76	1.68		
135	1.26	1.34	1.41	1.51	1.42	1.49	1.50	1.41	1.52	1.60	1.66	1.61	1.69	1.69	1.67	1.60	1.56		
140	1.26	1.33	1.39	1.48	1.40	1.55	1.54	1.46	1.54	1.63	1.68	1.62	1.69	1.66	1.62	1.60	1.55		
145	1.28	1.35	1.42	1.50	1.52	1.67	1.63	1.60	1.64	1.76	1.76	1.62	1.74	1.70	1.62	1.60	1.56		
150	1.36	1.46	1.53	1.63	1.78	1.72	1.80	1.77	1.78	1.87	1.86	1.77	1.83	1.79	1.70	1.66	1.58		
155	1.47	1.59	1.69	1.86	1.90	1.84	1.84	1.86	1.88	1.95	2.00	1.93	1.87	1.83	1.79	1.70	1.65		
160	1.59	1.70	1.78	1.87	1.92	1.99	1.92	1.89	1.91	1.96	2.03	2.05	1.88	1.85	1.81	1.74	1.71		
165	1.66	1.75	1.81	1.89	1.95	2.00	2.01	1.93	1.94	1.98	2.05	2.08	1.93	1.86	1.84	1.77	1.73		
170	1.72	1.81	1.88	1.95	2.02	2.03	2.02	2.00	2.02	2.02	2.08	2.12	2.04	1.90	1.90	1.80	1.81		
175	1.97	2.01	2.02	2.02	2.03	2.07	2.03	1.98	2.02	1.99	2.03	2.07	2.00	1.95	1.88	1.80	1.80		
180	2.03	2.03	2.03	2.01	2.05	2.07	2.02	1.95	1.96	1.92	1.93	1.92	1.89	1.81	1.81	1.78	1.80		



5. Photo of sample

Photo document



**Revision History**

Revision	Issue Date	Revision Content	Revised By
V1.1	2021/09/03	Modify the Client 、 Manufacturer 、 Model and Trademark	Seth Cai

Remark: This report is based on the report No. LCS200722068BS. This report is invalid without the original report.

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