

LM-79-08 Test Report

For

LIGHT EFFICIENT DESIGN, LLC

(Brand Name: LIGHT EFFICIENT DESIGN, LLC)

Suite 301, 188 S.Northwest Highway, Cary, IL60013, USA

LED Luminaires

Model name(s): LED-8136M40

Representative (Tested) Model: LED-8136M40

Model Different: N/A

Test & Report By:

Garman Mo

Engineer: Garman Mo

Date: Nov.01,2018

Review By:

John Li

Manager: John-Li

Note: 1.The results contained in this report pertain only to the tested samples.

2.This report does not imply product certification, approval, or endorsement by NVLAP, NIST, or any agency of the Federal Government.

Laboratory: Standard-Tech Co., Ltd. Testing Center
NVLAP CODE: 201011-0

Report Format Number STD/QR4909-A/2

Address: Standard-Tech Building, No.6 Guanhong Road,Guangzhou Science City, Guangzhou 510663, China

Tel: 8620-3229 0320

Fax: 8620-32290422

<http://www.standard-tech.com>

1.1 Product Information:

Organization Name	LIGHT EFFICIENT DESIGN, LLC	
Brand Name	LIGHT EFFICIENT DESIGN, LLC	
Model Number	LED-8136M40	
SKU (if available)	N/A	
Type of Luminaire (for integral lamps, list base type and lamp type)	LED Luminaires	
Rated Voltage / Frequency	120-277Vac, 50/60Hz	
Nominal Power	90W	
Rated Initial Lamp Lumen	--	
Declared CCT	4000K	
LED Manufacturer	Everlight	
LED Model	67-21S/KK7C-H407034Z15/DT(GC)	
Sample Number	JBE180907-E1	
Luminaire Aperture (for downlights)	--	in.
Luminaire Length	--	mm
Luminaires Width	--	mm
Number of Units (modular products)	N/A	s

Photo



1.2 Test Specifications:

Date of Receipt	Oct.30,2018
Date of Test	Oct.31,2018
Test item	<ol style="list-style-type: none"> 1. Total Luminous Flux 2. Luminous Distribution Intensity 3. Luminous Efficacy 4. Correlated Color Temperature 5. Color Rendering Index 6. Chromaticity Coordinate 7. Electrical Parameters
Reference Standard	<ol style="list-style-type: none"> 1. IES LM-79-2008 Electrical and Photometric Measurements of Solid-State Lighting Products 2. ANSI C78.377-2008 Specifications for the Chromaticity of Solid State Lighting Products 3. CIE 13.3-1995 Method of Measuring and Specifying Colour Rendering Properties of Light Sources 4. CIE 15-2004 Technical Report Colorimetry 5. IESNA LM-16-93 Practical Guide to Colorimetry of Light Source 6. IESNA TM-16-05 Technical Memorandum on Light Emitting Diode (LED) Sources and Systems
Reference Work Instruction	QD25

1.3 Test Methods

<p>1) Photometric and Light Distribution Measurement – Goniophotometer Method: Photometric parameters were measured using the goniophotometer and software. The ambient temperature shall be maintained at 25 °C ± 1 °C, measured at a point not more than 1 m from the sample and at the same height as the sample. The sample was operated at 120 or rated Volts AC, 60Hz. It was stabilized before measurement was made. Luminous flux, luminaire efficacy, zonal lumen were calculated from the software taken at 1 °vertical intervals and 22.5 °horizontal intervals.</p>
<p>2) Chromaticity Measurement – Sphere-Spectroradiometer Method: Chromaticity parameters were measured using an integrating sphere, a spectroradiometer and software. The ambient temperature condition inside the sphere was maintained at 25 °C ± 1 °C. 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 120 or rated Volts AC, 60Hz. It was stabilized before measurement was made. Chromaticity coordinates, correlated color temperature and color rendering index were calculated from the spectral power distribution taken at 5 nm intervals over the range of 380 to 780 nm.</p>
<p>3) Electrical Measurements: Electrical parameters were measured using power meters incorporated in goniophotometer or sphere-spectroradiometer system. The ambient temperature surrounding the sample was maintained at 25 °C ± 1 °C. The sample was operated at 120 or rated Volts AC, 60Hz. It was stabilized before measurement was made. Voltage, frequency, current, power, power factor and total harmonic distortion were measured by and read from the power meter.</p>

2.1 Electrical, Photometric and Chromaticity Measurements
(Refer to Work Instruction QD25)

Test date	2018-10-31	Test Ambient:	25.2 °C
Test Orientation	As intended	Stabilization Time (min)	90
Model Number	LED-8136M40		

Electrical Measurement:

Sample No.	Voltage (Vac)	Frequency (Hz)	Current (A)	Power (W)	Power Factor	THD %
JBE180907-	120.0	60	0.7543	89.63	0.9902	11.06
E1	277.0	60	0.3510	89.30	0.9185	17.44

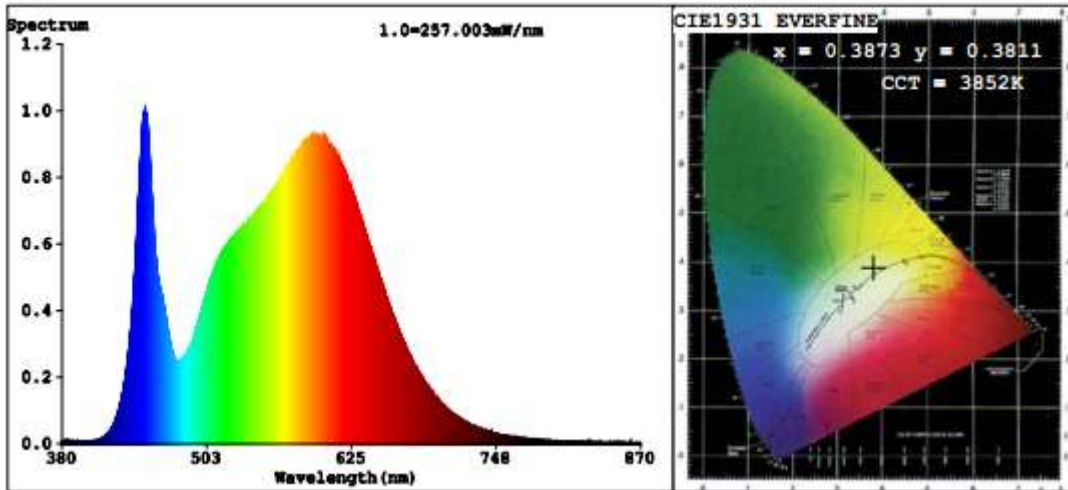
Chromaticity Measurement - Sphere-Spectroradiometer Method:

Parameter	Result	Special Color Rendering Indices			
Test Voltage (V)	120.0	R1	82	R9	11
Frequency (Hz)	60	R2	90	R10	75
CCT (K)	3852	R3	95	R11	82
Duv	0.0001	R4	83	R12	64
Chromaticity (x, y)	x=0.3873 y=0.3811	R5	82	R13	84
Chromaticity (u', v')	u'=0.2279 v'=0.5045	R6	86	R14	97
Color Rendering Index (CRI)	83.6	R7	86	R15	76
R9	11	R8	65	--	--

Photometric Measurement – Goniophotometer Method:

Parameter	Result	
Test Voltage (V)	120.0	277.0
Frequency (Hz)	60	60
Total Luminous (lm)	11827	11648
Luminous Efficacy (lm/W)	131.95	130.44
Beam Angle (°)	111.1	--
Center Beam Candle Power (cd)	4160	--

Spectral Power Distribution & Chromaticity Diagram



Zonal Lumen Tabulation

Zonal Lumen Summary		
Zone	Lumens	% Luminaire
0-30	3,271.4	27.7%
0-40	5,421.0	45.8%
0-60	9,537.3	80.6%
60-90	2,160.2	18.3%
70-100	889.2	7.5%
90-120	89.6	0.8%
0-90	11,697.5	98.9%
90-180	128.4	1.1%
0-180	11,825.9	100%

Lumens Per Zone					
Zone	Lumens	% Total	Zone	Lumens	% Total
0-10	394.3	3.3%	90-100	44.5	0.4%
10-20	1,135.8	9.6%	100-110	29.8	0.3%
20-30	1,741.3	14.7%	110-120	15.3	0.1%
30-40	2,149.6	18.2%	120-130	11.5	0.1%
40-50	2,201.2	18.6%	130-140	9.7	0.1%
50-60	1,915.0	16.2%	140-150	7.6	0.1%
60-70	1,315.5	11.1%	150-160	5.4	0%
70-80	652.6	5.5%	160-170	3.6	0%
80-90	192.1	1.6%	170-180	1.1	0%

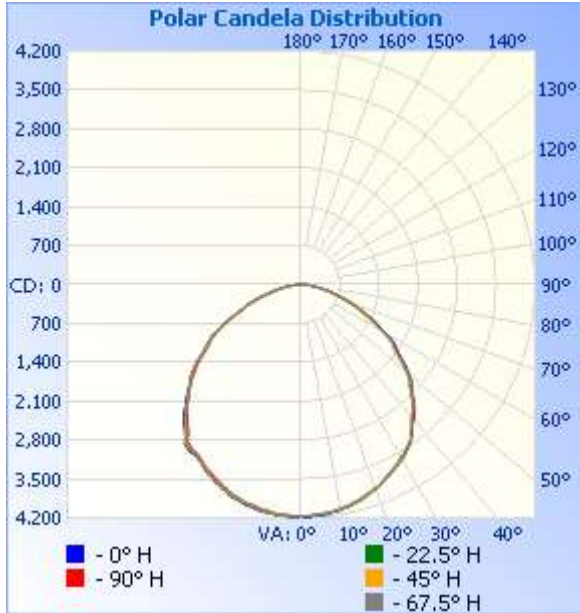
Laboratory: Standard-Tech Co., Ltd. Testing Center
 NVLAP CODE: 201011-0

Report Format Number STD/QR4909-A/2

Address: Standard-Tech Building, No.6 Guanhong Road,Guangzhou Science City, Guangzhou 510663, China

Tel: 8620-3229 0320 Fax: 8620-32290422 <http://www.standard-tech.com>

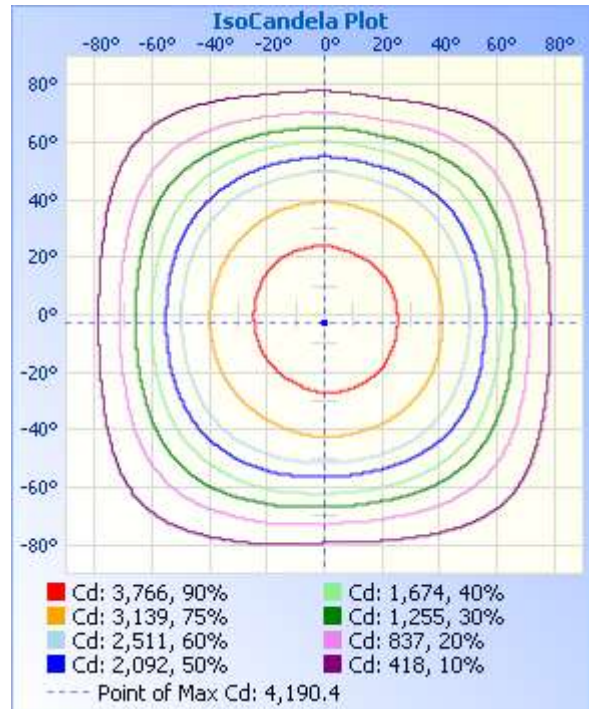
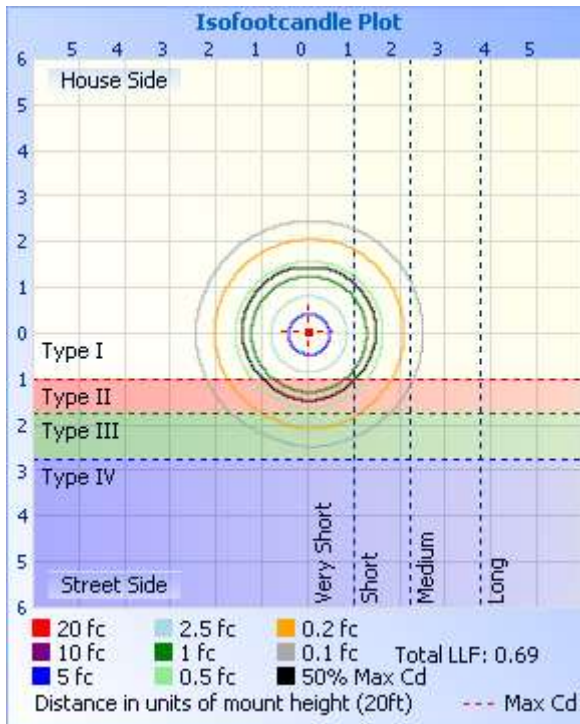
Photometric Data



Illuminance at a Distance

	Center Beam fc	Beam Width	
17.0ft	14.40 fc	49.9 ft	49.6 ft
34.0ft	3.60 fc	99.9 ft	99.2 ft
51.0ft	1.60 fc	149.8 ft	148.8 ft
68.0ft	0.90 fc	199.7 ft	198.4 ft
85.0ft	0.58 fc	249.7 ft	248.0 ft
102.0ft	0.40 fc	299.6 ft	297.6 ft

■ Vert. Spread: 111.5°
■ Horiz. Spread: 111.1°



Laboratory: Standard-Tech Co., Ltd. Testing Center
NVLAP CODE: 201011-0

Report Format Number STD/QR4909-A/2

Address: Standard-Tech Building, No.6 Guanhong Road, Guangzhou Science City, Guangzhou 510663, China

Tel: 8620-3229 0320

Fax: 8620-32290422

<http://www.standard-tech.com>

Candela Table - Type C

	0	22.5	45	67.5	90	112.5	135	157.5	180	202.5	225	247.5	270	292.5	315	337.5	360
0	4160	4160	4160	4160	4160	4160	4160	4160	4160	4160	4160	4160	4160	4160	4160	4160	4160
1	4190	4169	4169	4158	4169	4147	4136	4125	4190	4169	4169	4158	4158	4158	4147	4147	4190
2	4190	4179	4158	4158	4158	4136	4125	4125	4190	4169	4169	4158	4158	4158	4147	4136	4190
3	4169	4158	4158	4158	4147	4136	4125	4136	4179	4179	4169	4169	4158	4147	4147	4136	4169
4	4169	4158	4147	4147	4158	4136	4136	4125	4169	4169	4169	4158	4147	4147	4125	4136	4169
5	4158	4158	4136	4136	4147	4136	4136	4114	4169	4169	4169	4158	4158	4147	4136	4125	4158
6	4158	4147	4136	4136	4136	4125	4136	4136	4169	4169	4158	4147	4147	4125	4136	4136	4158
7	4158	4136	4125	4125	4136	4125	4125	4114	4158	4158	4147	4136	4136	4103	4114	4114	4158
8	4125	4125	4125	4114	4125	4114	4114	4114	4158	4147	4147	4125	4114	4103	4114	4103	4125
9	4125	4114	4103	4103	4114	4103	4103	4103	4147	4125	4136	4114	4103	4103	4092	4082	4125
10	4103	4114	4103	4092	4092	4092	4082	4092	4147	4114	4125	4125	4103	4082	4082	4071	4103
11	4092	4092	4082	4071	4082	4071	4082	4082	4125	4103	4103	4103	4082	4071	4060	4060	4092
12	4082	4082	4071	4060	4082	4071	4060	4071	4103	4114	4092	4092	4060	4060	4038	4049	4082
13	4071	4060	4060	4038	4049	4049	4038	4060	4092	4092	4082	4082	4060	4049	4027	4027	4071
14	4049	4049	4049	4027	4027	4038	4038	4049	4092	4071	4060	4049	4049	4038	4016	3994	4049
15	4027	4027	4027	4016	4005	4016	4016	4027	4060	4060	4038	4027	4038	4005	3994	3984	4027
16	4005	4016	3994	3984	3984	3994	4005	3994	4038	4038	4027	4005	4005	3994	3962	3951	4005
17	3984	3984	3984	3962	3962	3973	3973	3984	4027	4027	4005	3984	3994	3973	3940	3940	3984
18	3951	3962	3962	3940	3940	3951	3962	3962	4016	3994	3994	3962	3973	3951	3918	3918	3951
19	3940	3929	3940	3918	3929	3940	3940	3940	3994	3973	3973	3951	3940	3918	3896	3886	3940
20	3907	3907	3929	3907	3907	3907	3918	3918	3951	3951	3951	3929	3907	3896	3875	3864	3907
21	3886	3875	3896	3886	3886	3886	3886	3896	3929	3940	3918	3896	3896	3853	3842	3831	3886
22	3853	3853	3864	3853	3853	3864	3864	3864	3907	3896	3886	3886	3853	3842	3820	3809	3853
23	3809	3820	3831	3831	3820	3831	3831	3842	3886	3875	3864	3853	3831	3799	3799	3777	3809
24	3788	3788	3799	3788	3788	3799	3799	3799	3853	3853	3831	3831	3799	3788	3766	3755	3788
25	3755	3766	3777	3766	3766	3766	3777	3788	3820	3809	3809	3788	3766	3766	3744	3722	3755
26	3722	3722	3733	3744	3744	3733	3744	3766	3799	3788	3788	3755	3733	3744	3711	3690	3722
27	3690	3690	3701	3711	3711	3701	3711	3722	3766	3766	3744	3722	3722	3701	3690	3668	3690
28	3668	3657	3668	3679	3679	3679	3679	3690	3733	3722	3711	3690	3690	3679	3657	3635	3668

Laboratory: Standard-Tech Co., Ltd. Testing Center
NVLAP CODE: 201011-0

Report Format Number STD/QR4909-A/2

Address: Standard-Tech Building, No.6 Guanhong Road, Guangzhou Science City, Guangzhou 510663, China

Tel: 8620-3229 0320 Fax: 8620-32290422 <http://www.standard-tech.com>

29	3635	3624	3635	3657	3657	3646	3646	3657	3690	3679	3690	3657	3657	3635	3635	3614	3635
30	3603	3581	3603	3635	3624	3614	3614	3635	3657	3646	3646	3624	3614	3603	3581	3581	3603
31	3581	3570	3592	3603	3592	3592	3581	3603	3624	3624	3603	3603	3581	3570	3548	3548	3581
32	3537	3526	3559	3559	3548	3548	3548	3570	3603	3603	3581	3581	3559	3526	3516	3516	3537
33	3494	3505	3516	3526	3505	3516	3537	3526	3614	3603	3581	3592	3559	3526	3516	3505	3494
34	3461	3472	3472	3483	3461	3472	3494	3505	3603	3581	3570	3570	3526	3516	3483	3461	3461
35	3418	3428	3418	3439	3418	3428	3461	3472	3570	3570	3548	3526	3505	3494	3461	3439	3418
36	3363	3363	3341	3363	3352	3374	3418	3407	3548	3548	3526	3494	3472	3461	3428	3385	3363
37	3298	3309	3265	3287	3298	3331	3352	3352	3450	3450	3418	3374	3363	3341	3320	3298	3298
38	3243	3243	3200	3233	3243	3265	3287	3298	3385	3374	3352	3320	3287	3276	3243	3222	3243
39	3178	3167	3135	3156	3189	3222	3222	3233	3320	3309	3287	3265	3243	3222	3167	3145	3178
40	3113	3113	3080	3102	3156	3167	3156	3189	3276	3222	3243	3211	3167	3135	3102	3091	3113
41	3069	3058	3048	3058	3102	3102	3102	3145	3211	3178	3178	3156	3124	3091	3048	3037	3069
42	3015	2993	2993	3015	3048	3048	3048	3091	3145	3113	3102	3102	3069	3037	2993	2971	3015
43	2950	2950	2950	2950	2993	3004	2993	3048	3069	3058	3037	3026	3004	2960	2928	2917	2950
44	2895	2873	2873	2895	2917	2939	2917	2982	2971	2971	2950	2939	2928	2873	2852	2830	2895
45	2830	2797	2786	2808	2841	2852	2852	2906	2917	2917	2873	2863	2852	2797	2786	2765	2830
46	2765	2732	2721	2765	2775	2797	2808	2841	2841	2841	2808	2819	2797	2754	2754	2732	2765
47	2710	2667	2656	2710	2732	2732	2743	2765	2765	2765	2743	2743	2732	2688	2699	2688	2710
48	2645	2623	2634	2656	2667	2677	2699	2688	2699	2688	2699	2688	2667	2634	2612	2645	2645
49	2601	2580	2612	2612	2623	2645	2645	2634	2645	2645	2634	2623	2601	2547	2525	2536	2601
50	2547	2492	2525	2514	2536	2569	2590	2590	2590	2590	2580	2547	2514	2482	2438	2460	2547
51	2460	2416	2384	2416	2427	2471	2514	2536	2525	2525	2514	2492	2449	2405	2384	2351	2460
52	2384	2340	2286	2340	2351	2384	2460	2471	2449	2427	2427	2416	2384	2329	2297	2275	2384
53	2297	2253	2188	2253	2264	2318	2373	2373	2373	2351	2362	2351	2307	2242	2209	2199	2297
54	2188	2155	2122	2155	2188	2264	2286	2286	2286	2231	2253	2264	2209	2144	2112	2112	2188
55	2122	2090	2057	2090	2122	2166	2177	2199	2177	2144	2177	2188	2122	2079	2035	2046	2122
56	2035	2003	1992	2035	2068	2079	2101	2122	2079	2057	2079	2101	2046	2003	1981	2003	2035
57	2003	1959	1959	2003	2014	2035	2035	2057	1981	1981	2003	2057	2014	1937	1916	1937	2003
58	1970	1905	1926	1916	1937	1992	1981	1970	1926	1937	1948	1981	1970	1883	1829	1839	1970
59	1861	1807	1818	1796	1829	1926	1959	1926	1916	1916	1872	1872	1872	1785	1731	1709	1861
60	1752	1731	1698	1709	1741	1785	1883	1883	1839	1829	1796	1807	1785	1720	1643	1643	1752

Laboratory: Standard-Tech Co., Ltd. Testing Center
NVLAP CODE: 201011-0

Report Format Number STD/QR4909-A/2

Address: Standard-Tech Building, No.6 Guanhong Road, Guangzhou Science City, Guangzhou 510663, China

Tel: 8620-3229 0320 Fax: 8620-32290422 <http://www.standard-tech.com>

61	1633	1633	1578	1600	1633	1687	1741	1796	1741	1720	1731	1731	1687	1611	1578	1556	1633
62	1578	1556	1502	1524	1556	1611	1633	1687	1633	1611	1633	1622	1600	1535	1491	1448	1578
63	1513	1437	1393	1448	1469	1535	1556	1589	1556	1513	1524	1513	1513	1437	1361	1350	1513
64	1404	1382	1317	1382	1426	1458	1480	1535	1480	1437	1437	1426	1415	1350	1263	1263	1404
65	1317	1273	1263	1328	1350	1393	1415	1437	1371	1350	1339	1361	1317	1263	1197	1208	1317
66	1208	1186	1186	1263	1263	1306	1350	1350	1263	1241	1241	1241	1219	1186	1143	1132	1208
67	1154	1121	1154	1197	1197	1230	1273	1230	1165	1154	1175	1132	1175	1121	1078	1045	1154
68	1067	1056	1067	1110	1110	1143	1165	1165	1110	1099	1110	1078	1099	1056	1012	925	1067
69	980	990	990	1045	1045	1067	1088	1121	1056	1056	1056	1045	1023	990	925	871	980
70	903	882	903	969	958	980	1012	1045	1001	980	947	969	914	882	838	805	903
71	827	816	827	892	882	914	947	980	903	903	860	871	827	795	751	740	827
72	795	751	751	805	805	838	871	903	838	816	805	805	784	740	686	675	795
73	697	686	697	729	751	795	838	849	784	762	762	762	729	675	642	610	697
74	653	642	653	675	707	729	729	795	697	697	718	675	664	631	566	566	653
75	599	588	566	599	620	642	664	740	620	631	642	620	610	544	522	490	599
76	544	533	522	544	566	599	642	653	588	566	566	555	512	501	457	446	544
77	490	468	479	501	512	533	566	599	522	512	512	501	479	468	403	403	490
78	435	414	435	446	479	501	522	555	457	468	468	446	435	403	370	348	435
79	381	359	370	381	414	424	457	479	403	414	403	392	381	327	316	316	381
80	337	348	327	337	370	403	414	424	359	348	359	337	327	294	261	272	337
81	294	294	272	294	316	337	370	370	305	316	327	316	305	261	261	239	294
82	261	250	250	272	283	305	327	348	272	294	283	283	261	229	218	207	261
83	229	218	229	239	239	261	272	294	239	239	239	229	218	207	174	163	229
84	196	196	196	207	218	239	239	261	207	218	207	207	185	163	152	141	196
85	163	174	163	185	185	196	207	218	163	185	185	163	152	131	109	109	163
86	141	141	141	152	163	174	185	185	131	141	131	109	109	87	87	76	141
87	109	98	109	120	131	152	152	163	98	98	87	87	76	65	65	65	109
88	76	76	87	87	98	120	131	141	76	65	76	65	65	65	65	65	76
89	54	65	54	65	54	76	87	98	65	54	65	54	54	54	54	44	54
90	54	54	54	54	54	54	54	65	54	54	65	54	54	54	54	54	54
91	44	44	44	54	44	54	44	44	54	54	54	54	44	54	44	54	44
92	33	33	44	33	44	44	44	44	44	54	54	44	44	44	44	44	33

Laboratory: Standard-Tech Co., Ltd. Testing Center
NVLAP CODE: 201011-0

Report Format Number STD/QR4909-A/2

Address: Standard-Tech Building, No.6 Guanhong Road, Guangzhou Science City, Guangzhou 510663, China

Tel: 8620-3229 0320 Fax: 8620-32290422 <http://www.standard-tech.com>

93	44	44	44	33	33	33	44	33	44	54	54	44	44	44	44	44
94	33	33	44	33	33	44	33	33	54	54	44	44	44	44	44	33
95	33	33	33	44	33	33	33	33	44	44	44	44	54	44	44	33
96	33	33	33	33	33	33	33	33	44	44	44	44	54	44	44	33
97	33	33	33	33	33	33	33	33	44	44	44	44	54	44	44	33
98	22	33	33	33	33	33	33	33	33	44	54	44	44	33	33	22
99	22	33	33	33	22	33	33	33	33	44	44	44	44	44	33	22
100	22	33	22	33	33	22	33	22	33	33	33	33	33	44	44	22
101	22	33	22	33	33	22	22	22	33	33	33	44	44	44	33	22
102	22	33	22	33	33	22	33	22	33	33	44	44	44	44	33	22
103	22	22	22	22	22	33	33	22	33	33	33	44	33	44	33	22
104	22	33	33	33	22	33	22	22	33	33	33	33	33	33	33	22
105	22	33	22	22	22	33	22	22	33	33	33	44	44	33	33	22
106	22	33	33	33	22	22	22	22	33	33	44	33	33	33	33	22
107	11	22	33	22	33	22	22	22	33	33	33	44	22	33	22	11
108	11	22	33	22	22	22	22	22	22	22	22	33	22	33	22	11
109	11	22	22	22	22	22	22	22	22	22	33	22	22	22	22	11
110	11	22	22	11	22	22	11	11	22	22	22	22	22	22	22	11
111	11	11	11	22	22	22	11	11	22	22	22	22	33	22	22	11
112	11	11	22	22	22	11	11	11	22	22	22	22	22	22	22	11
113	0	22	11	22	22	11	11	11	22	11	22	11	22	22	22	0
114	0	11	11	11	11	11	11	11	33	33	22	22	22	22	22	0
115	11	11	22	11	11	0	11	0	22	22	22	22	22	22	22	11
116	0	11	11	11	11	11	0	11	22	33	22	33	11	22	22	0
117	0	11	11	11	11	0	0	11	22	22	22	22	22	11	22	0
118	11	11	11	0	0	0	0	0	22	11	22	11	22	22	22	11
119	0	11	0	11	11	0	11	11	11	11	11	11	22	11	22	0
120	0	11	0	11	11	0	0	11	22	11	22	22	22	22	22	0
121	0	11	0	11	0	0	0	0	22	22	22	22	22	22	22	0
122	0	11	11	11	11	11	11	11	22	22	22	22	22	22	11	0
123	11	11	11	11	0	0	0	0	22	22	22	22	22	22	22	11
124	11	11	11	0	11	11	0	0	22	22	22	11	11	22	11	11

Laboratory: Standard-Tech Co., Ltd. Testing Center
NVLAP CODE: 201011-0

Report Format Number STD/QR4909-A/2

Address: Standard-Tech Building, No.6 Guanhong Road, Guangzhou Science City, Guangzhou 510663, China

Tel: 8620-3229 0320 Fax: 8620-32290422 <http://www.standard-tech.com>

125	0	11	22	11	0	0	0	0	22	22	22	22	22	11	22	11	0
126	0	11	0	11	0	11	11	0	22	22	22	22	22	22	22	22	0
127	0	11	0	11	0	11	11	0	11	22	22	22	11	22	22	11	0
128	0	11	0	11	0	0	0	0	22	22	22	22	22	22	22	11	0
129	0	11	11	11	11	11	11	0	11	11	22	22	11	22	22	11	0
130	0	11	11	11	11	11	0	0	11	22	22	22	22	22	22	22	0
131	0	11	11	11	0	11	0	0	22	22	22	22	22	11	11	22	0
132	0	11	11	11	11	11	11	11	22	22	22	22	22	11	11	11	0
133	0	11	11	0	11	11	0	0	11	11	22	11	22	11	11	22	0
134	0	0	0	11	11	0	0	0	22	33	22	22	22	22	22	11	0
135	0	11	11	11	11	0	11	0	22	22	22	22	22	22	11	22	0
136	0	11	11	11	0	11	0	0	22	11	22	22	22	11	11	22	0
137	11	11	11	11	11	0	0	0	22	22	22	22	22	11	22	11	11
138	0	0	11	11	11	11	0	11	11	22	22	22	22	11	11	22	0
139	0	11	11	11	11	11	11	11	11	22	22	11	22	22	22	11	0
140	0	0	22	11	11	0	11	0	22	11	22	22	11	22	22	11	0
141	0	11	11	11	0	11	0	0	22	22	22	22	22	11	22	11	0
142	11	11	11	11	11	11	0	11	22	22	22	22	22	22	22	11	11
143	0	0	11	0	0	11	0	0	11	22	22	22	22	11	11	22	0
144	11	11	0	11	0	0	0	11	11	22	22	22	11	22	22	11	11
145	0	11	11	11	11	11	0	11	11	22	22	22	11	22	11	22	0
146	0	11	11	11	11	11	11	11	11	22	22	22	11	22	22	11	0
147	0	0	0	0	11	11	11	0	22	11	11	22	22	22	22	11	0
148	11	11	0	11	11	0	0	0	11	22	22	11	22	22	11	11	11
149	0	11	0	11	11	11	11	0	11	22	11	22	22	11	11	11	0
150	11	22	11	11	11	0	0	11	11	22	22	22	11	11	11	22	11
151	0	11	11	22	11	0	11	11	22	22	11	22	11	22	11	11	0
152	0	0	11	11	11	11	0	11	22	11	11	22	11	22	11	22	0
153	0	22	0	11	0	11	11	0	11	11	22	22	11	11	11	11	0
154	0	22	11	0	11	11	11	0	22	22	11	11	22	22	11	11	0
155	0	11	11	0	11	11	0	0	11	11	22	22	11	11	11	11	0
156	0	11	22	11	0	11	0	11	22	11	11	11	11	22	11	11	0

Laboratory: Standard-Tech Co., Ltd. Testing Center
NVLAP CODE: 201011-0

Report Format Number STD/QR4909-A/2

Address: Standard-Tech Building, No.6 Guanhong Road, Guangzhou Science City, Guangzhou 510663, China

Tel: 8620-3229 0320 Fax: 8620-32290422 <http://www.standard-tech.com>

157	11	11	0	11	0	11	11	11	22	22	11	11	22	22	11	11	11
158	11	11	11	11	22	11	11	11	11	22	22	11	22	11	11	22	11
159	0	11	0	11	11	11	0	11	11	22	22	11	11	11	11	11	0
160	11	0	11	11	11	11	11	11	22	11	22	11	11	11	22	22	11
161	11	11	11	11	11	11	11	0	11	22	22	11	22	11	22	11	11
162	0	11	0	11	11	11	0	11	22	22	22	11	11	22	11	22	0
163	0	11	11	11	11	0	11	11	11	22	22	11	11	22	11	11	0
164	0	11	22	11	11	11	11	11	22	11	22	11	22	22	11	0	0
165	11	11	11	11	11	11	11	11	11	22	22	22	11	22	11	11	11
166	0	11	11	11	11	11	11	11	11	22	22	11	22	22	11	11	0
167	0	11	11	11	22	11	11	11	22	11	22	22	22	11	11	11	0
168	0	11	11	11	11	11	11	11	11	11	22	11	11	22	22	11	0
169	11	11	11	0	11	11	11	11	11	11	22	22	11	11	22	11	11
170	11	22	11	11	11	11	11	11	11	11	22	11	22	11	11	11	11
171	0	11	11	11	11	11	11	11	11	11	11	11	22	11	11	11	0
172	0	11	0	11	11	11	11	0	22	22	11	11	11	11	11	11	0
173	11	22	11	0	11	11	11	11	22	11	22	11	11	11	11	11	11
174	0	11	11	11	11	11	11	22	11	22	11	22	22	22	11	11	0
175	11	22	11	11	22	11	11	0	11	22	11	11	11	11	11	11	11
176	0	11	0	11	11	11	11	11	11	0	22	11	11	11	11	11	0
177	11	11	11	11	11	11	11	22	11	22	22	22	11	22	11	0	11
178	0	22	11	11	22	0	11	11	22	22	11	11	11	11	11	11	0
179	11	22	22	22	22	11	11	11	11	11	11	11	22	11	11	11	11
180	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14

Laboratory: Standard-Tech Co., Ltd. Testing Center
NVLAP CODE: 201011-0

Report Format Number STD/QR4909-A/2

Address: Standard-Tech Building, No.6 Guanhong Road,Guangzhou Science City, Guangzhou 510663, China

Tel: 8620-3229 0320 Fax: 8620-32290422 <http://www.standard-tech.com>

3. Test Equipment

Equipment ID	Equipment Name	Last Calibration Date	Next Calibration Date
ST-R-331	2 meter Integrating Sphere	2018-07-02	2019-07-01
ST-R-327	Spectral analysis system HAAS-2000	2018-07-02	2019-07-01
ST-R-332	Standard Lamp	2018-07-04	2019-07-03
ST-R-333	Power Meter for Integrating Sphere	2018-06-28	2019-06-27
ST-R-355	Goniophotometer system	2018-07-01	2019-06-30
ST-R-359	Standard Lamp	2018-07-04	2019-07-03
ST-R-358	Power Meter for Goniophotometer	2018-06-28	2019-06-27

Expand Uncertainty:
Photometric Measurement (Sphere):2.04%, k=2
Chromaticity Measurement(Sphere):28.8K, k=2
Photometric Measurement(Goniophotometer):2.36%, k=2

******* END OF REPORT *******