

**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-8130M50

Representative (Tested) Model: LED-8130M50

Model Different: N/A

Test &amp; 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

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**1.1 Product Information:**

Organization Name	LIGHT EFFICIENT DESIGN, LLC	
Brand Name	LIGHT EFFICIENT DESIGN, LLC	
Model Number	LED-8130M50	
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	150W	
Rated Initial Lamp Lumen	--	
Declared CCT	5000K	
LED Manufacturer	Everlight	
LED Model	67-21S/KK7C-H507034Z15/DT(GC)	
Sample Number	JBE180907-B1	
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"> <li>1. Total Luminous Flux</li> <li>2. Luminous Distribution Intensity</li> <li>3. Luminous Efficacy</li> <li>4. Correlated Color Temperature</li> <li>5. Color Rendering Index</li> <li>6. Chromaticity Coordinate</li> <li>7. Electrical Parameters</li> </ol>
Reference Standard	<ol style="list-style-type: none"> <li>1. IES LM-79-2008 Electrical and Photometric Measurements of Solid-State Lighting Products</li> <li>2. ANSI C78.377-2008 Specifications for the Chromaticity of Solid State Lighting Products</li> <li>3. CIE 13.3-1995 Method of Measuring and Specifying Colour Rendering Properties of Light Sources</li> <li>4. CIE 15-2004 Technical Report Colorimetry</li> <li>5. IESNA LM-16-93 Practical Guide to Colorimetry of Light Source</li> <li>6. IESNA TM-16-05 Technical Memorandum on Light Emitting Diode (LED) Sources and Systems</li> </ol>
Reference Work Instruction	QD25

**1.3 Test Methods****1) Photometric and Light Distribution Measurement – Goniophotometer Method:**

Photometric parameters were measured using the goniophotometer and software. The ambient temperature shall be maintained at  $25^{\circ}\text{C} \pm 1^{\circ}\text{C}$ , 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  $1^{\circ}$  vertical intervals and  $22.5^{\circ}$  horizontal intervals.

**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  $25^{\circ}\text{C} \pm 1^{\circ}\text{C}$ . 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.

**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  $25^{\circ}\text{C} \pm 1^{\circ}\text{C}$ . 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.

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

<b>Test date</b>	2018-10-31	<b>Test Ambient:</b>	25.2 °C
<b>Test Orientation</b>	As intended	<b>Stabilization Time (min)</b>	90
<b>Model Number</b>	LED-8130M50		

**Electrical Measurement:**

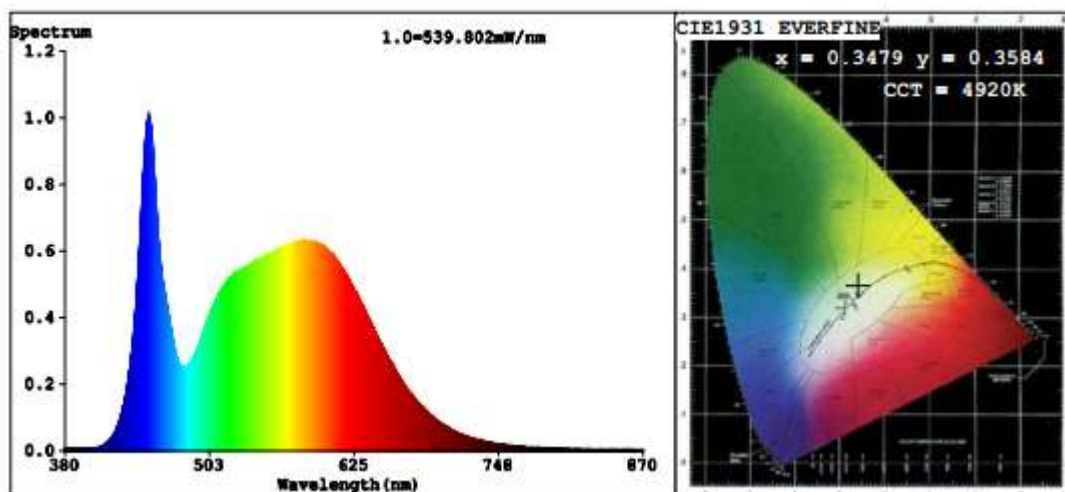
Sample No.	Voltage (Vac)	Frequency (Hz)	Current (A)	Power (W)	Power Factor	THD %
JBE180907-	120.0	60	1.240	147.9	0.9939	8.66
B1	277.0	60	0.5581	145.7	0.9425	13.98

**Chromaticity Measurement - Sphere-Spectroradiometer Method:**

Parameter	Result	Special Color Rendering Indices			
Test Voltage (V)	120.0	R1	82	R9	12
Frequency (Hz)	60	R2	89	R10	73
CCT (K)	4920	R3	93	R11	82
Duv	0.0023	R4	83	R12	58
Chromaticity (x, y)	x=0.3479 y=0.3584	R5	82	R13	84
Chromaticity (u', v')	u'=0.2107 v'=0.4884	R6	84	R14	96
Color Rendering Index (CRI)	83.7	R7	88	R15	77
R9	12	R8	69	--	--

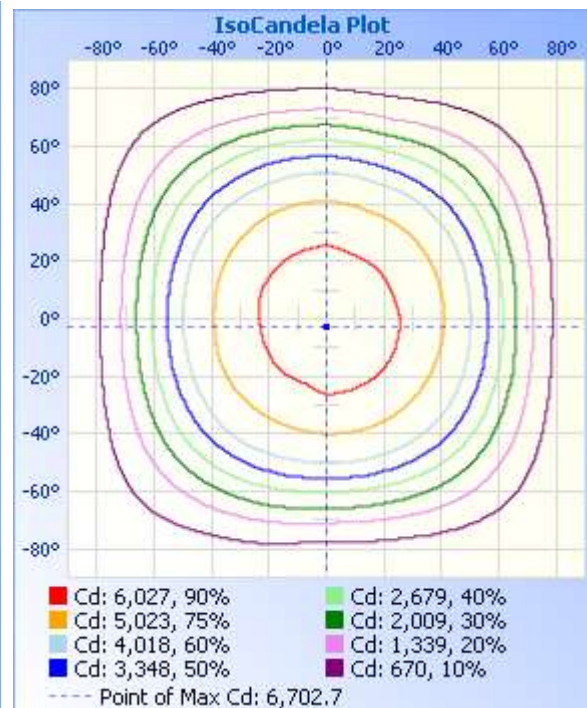
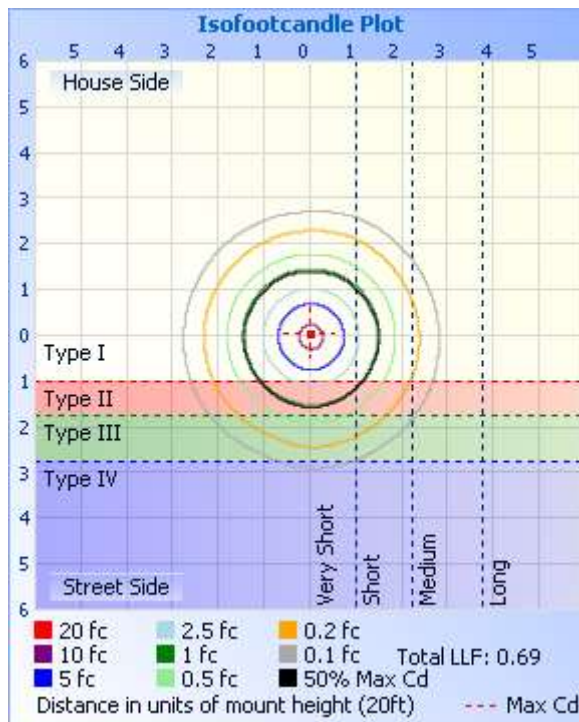
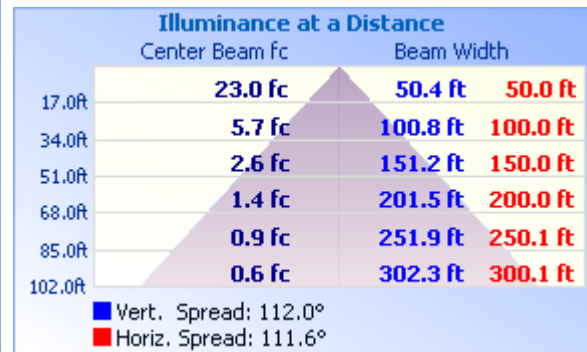
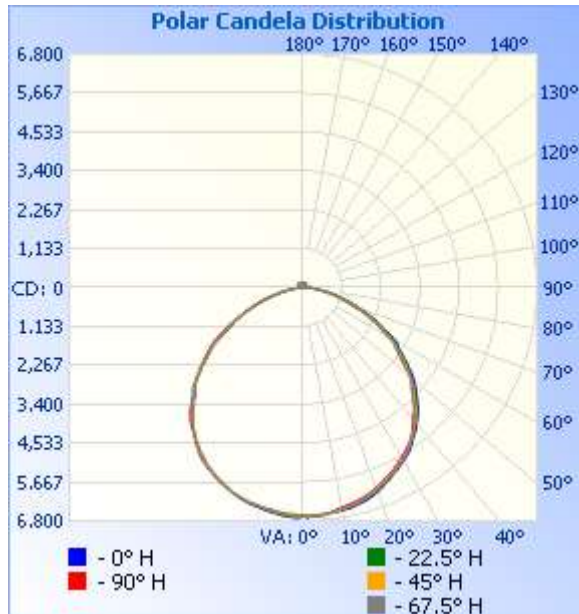
**Photometric Measurement – Goniophotometer Method:**

Parameter	Result	
Test Voltage (V)	120.0	277.0
Frequency (Hz)	60	60
Total Luminous (lm)	19374	19021
Luminous Efficacy (lm/W)	130.99	130.55
Beam Angle (°)	112.4	--
Center Beam Candle Power (cd)	6635	--

**Spectral Power Distribution & Chromaticity Diagram**

**Zonal Lumen Tabulation**

Zonal Lumen Summary		
Zone	Lumens	% Luminaire
0-30	5,213.4	26.9%
0-40	8,611.8	44.5%
0-60	15,191.7	78.4%
60-90	3,544.5	18.3%
70-100	1,481.1	7.6%
90-120	239.2	1.2%
0-90	18,736.2	96.7%
90-180	636.6	3.3%
0-180	19,372.8	100%

Lumens Per Zone					
Zone	Lumens	% Total	Zone	Lumens	% Total
0-10	627.4	3.2%	90-100	85.8	0.4%
10-20	1,810.0	9.3%	100-110	75.0	0.4%
20-30	2,775.9	14.3%	110-120	78.5	0.4%
30-40	3,398.4	17.5%	120-130	91.0	0.5%
40-50	3,504.9	18.1%	130-140	99.3	0.5%
50-60	3,075.0	15.9%	140-150	93.0	0.5%
60-70	2,149.2	11.1%	150-160	67.8	0.4%
70-80	1,077.6	5.6%	160-170	36.3	0.2%
80-90	317.7	1.6%	170-180	9.9	0.1%

**Photometric Data**


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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	6635	6635	6635	6635	6635	6635	6635	6635	6635	6635	6635	6635	6635	6635	6635	6635	6635
1	6703	6691	6657	6634	6634	6599	6588	6576	6703	6680	6645	6634	6634	6599	6588	6565	6703
2	6680	6668	6657	6645	6622	6611	6599	6576	6703	6680	6645	6622	6611	6588	6599	6565	6680
3	6668	6668	6645	6634	6634	6611	6599	6576	6691	6680	6645	6611	6611	6576	6565	6553	6668
4	6645	6657	6634	6645	6622	6599	6599	6565	6668	6668	6622	6611	6611	6565	6565	6530	6645
5	6657	6657	6634	6634	6634	6599	6588	6541	6668	6657	6611	6588	6588	6553	6541	6530	6657
6	6622	6634	6634	6611	6611	6576	6565	6518	6645	6622	6599	6576	6588	6553	6530	6507	6622
7	6599	6622	6611	6599	6599	6565	6541	6518	6622	6611	6588	6565	6565	6553	6518	6495	6599
8	6599	6611	6599	6588	6565	6530	6530	6484	6611	6576	6553	6530	6541	6541	6518	6495	6599
9	6588	6599	6599	6565	6530	6495	6495	6472	6588	6553	6541	6518	6530	6530	6518	6495	6588
10	6576	6576	6553	6541	6495	6472	6472	6438	6565	6541	6507	6518	6518	6507	6507	6472	6576
11	6576	6553	6518	6530	6472	6449	6461	6426	6530	6518	6495	6495	6495	6495	6495	6472	6576
12	6565	6530	6530	6518	6449	6415	6438	6403	6518	6495	6472	6472	6484	6484	6472	6461	6565
13	6541	6518	6484	6472	6426	6380	6403	6380	6495	6472	6449	6449	6472	6461	6449	6438	6541
14	6518	6484	6472	6461	6415	6357	6392	6369	6472	6472	6438	6449	6438	6426	6438	6426	6518
15	6495	6461	6438	6438	6380	6323	6346	6323	6449	6426	6392	6426	6426	6415	6403	6392	6495
16	6472	6438	6403	6403	6346	6311	6334	6300	6415	6392	6369	6403	6392	6380	6369	6369	6472
17	6449	6403	6369	6369	6323	6277	6300	6277	6392	6357	6346	6369	6369	6346	6334	6323	6449
18	6415	6380	6323	6323	6277	6242	6277	6242	6346	6346	6334	6346	6323	6311	6300	6288	6415
19	6380	6334	6288	6300	6254	6207	6231	6196	6323	6311	6311	6323	6300	6288	6277	6254	6380
20	6323	6300	6242	6254	6196	6173	6219	6173	6277	6265	6265	6277	6254	6242	6231	6207	6323
21	6288	6265	6207	6219	6161	6138	6161	6115	6231	6219	6242	6242	6219	6207	6207	6150	6288
22	6231	6207	6161	6161	6104	6081	6115	6081	6184	6196	6196	6184	6173	6150	6150	6115	6231
23	6173	6161	6115	6127	6058	6046	6069	6035	6150	6150	6173	6150	6127	6092	6092	6081	6173
24	6138	6115	6069	6081	6023	5989	6012	5977	6104	6104	6115	6104	6081	6046	6058	6035	6138
25	6069	6058	6023	6035	5966	5943	5954	5943	6069	6046	6046	6058	6035	5989	6000	5989	6069
26	6023	6000	5977	5977	5931	5885	5897	5885	6023	6000	6012	5989	5977	5931	5954	5943	6023
27	5989	5954	5931	5943	5874	5850	5850	5839	5977	5966	5954	5943	5931	5885	5897	5885	5989
28	5931	5897	5885	5885	5827	5793	5816	5804	5931	5897	5897	5908	5885	5850	5862	5850	5931

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29	5874	5862	5839	5839	5758	5724	5758	5747	5874	5862	5862	5827	5827	5781	5827	5793	5874
30	5827	5804	5793	5793	5724	5689	5712	5712	5816	5816	5793	5781	5747	5735	5770	5758	5827
31	5781	5747	5735	5735	5666	5620	5666	5655	5758	5747	5735	5712	5689	5689	5712	5712	5781
32	5724	5689	5666	5678	5609	5563	5609	5609	5689	5689	5666	5655	5632	5597	5643	5643	5724
33	5678	5620	5620	5632	5551	5516	5574	5551	5609	5609	5620	5586	5563	5563	5597	5586	5678
34	5597	5551	5540	5551	5505	5459	5482	5470	5540	5528	5528	5528	5482	5505	5528	5505	5597
35	5528	5482	5447	5470	5424	5390	5413	5378	5459	5436	5436	5447	5424	5436	5424	5413	5528
36	5436	5413	5390	5378	5355	5332	5332	5286	5355	5355	5355	5355	5344	5367	5367	5344	5436
37	5367	5355	5298	5309	5263	5263	5229	5206	5286	5263	5252	5275	5286	5298	5286	5263	5367
38	5298	5286	5229	5229	5159	5171	5113	5102	5183	5183	5171	5194	5229	5229	5229	5206	5298
39	5229	5194	5159	5125	5090	5102	5033	5021	5079	5079	5079	5102	5159	5148	5148	5125	5229
40	5136	5125	5079	5044	4975	4987	4929	4941	4975	4987	4987	4998	5090	5067	5044	5021	5136
41	5056	5044	4975	4952	4883	4872	4825	4837	4872	4895	4883	4918	4987	4975	4952	4941	5056
42	4975	4952	4883	4837	4825	4791	4756	4768	4779	4814	4802	4837	4918	4895	4872	4849	4975
43	4895	4872	4791	4745	4722	4699	4653	4664	4664	4733	4710	4756	4791	4779	4756	4745	4895
44	4802	4768	4687	4618	4618	4595	4526	4561	4572	4618	4595	4641	4676	4653	4641	4607	4802
45	4687	4653	4595	4526	4549	4503	4422	4480	4457	4526	4492	4538	4549	4538	4515	4503	4687
46	4607	4561	4480	4399	4434	4399	4330	4376	4388	4445	4411	4411	4411	4399	4388	4376	4607
47	4492	4445	4376	4307	4330	4296	4238	4307	4330	4388	4342	4296	4307	4307	4296	4319	4492
48	4411	4353	4307	4261	4261	4215	4192	4238	4238	4307	4261	4250	4227	4204	4215	4238	4411
49	4307	4250	4204	4215	4169	4100	4134	4134	4111	4158	4123	4134	4134	4100	4123	4134	4307
50	4204	4100	4065	4100	4054	4008	4054	4019	3985	3996	3973	4042	4008	4019	4019	4008	4204
51	4111	4008	3962	3985	3939	3881	3927	3847	3847	3835	3847	3916	3881	3916	3904	3893	4111
52	3985	3893	3835	3824	3777	3754	3766	3674	3731	3731	3766	3777	3789	3812	3812	3789	3985
53	3835	3812	3720	3697	3616	3639	3639	3582	3616	3593	3628	3628	3662	3662	3662	3697	3835
54	3731	3708	3628	3582	3513	3513	3501	3478	3490	3467	3490	3513	3559	3524	3513	3559	3731
55	3593	3582	3490	3432	3409	3374	3363	3363	3340	3351	3340	3374	3443	3374	3363	3420	3593
56	3478	3443	3374	3317	3340	3294	3271	3294	3248	3282	3271	3294	3328	3236	3225	3282	3478
57	3351	3328	3236	3190	3248	3259	3202	3225	3144	3190	3179	3236	3225	3156	3133	3190	3351
58	3236	3248	3156	3144	3190	3167	3133	3063	2971	2994	3017	3121	3144	3075	3063	3086	3236
59	3202	3167	3063	3063	3052	2983	3006	2902	2787	2810	2845	2948	3017	2983	2960	2960	3202
60	3098	3029	2925	2902	2833	2810	2787	2706	2626	2649	2695	2764	2856	2833	2822	2822	3098

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61	2960	2914	2787	2776	2683	2672	2626	2603	2522	2511	2580	2660	2718	2672	2649	2672	2960
62	2787	2776	2649	2614	2568	2534	2499	2488	2407	2372	2430	2534	2568	2557	2534	2557	2787
63	2603	2603	2499	2453	2465	2419	2384	2361	2303	2280	2315	2372	2430	2430	2395	2395	2603
64	2499	2499	2395	2326	2349	2315	2269	2280	2177	2188	2211	2246	2269	2257	2257	2269	2499
65	2372	2384	2257	2200	2200	2154	2131	2131	2073	2050	2085	2073	2073	2073	2131	2154	2372
66	2280	2257	2142	2119	2085	2015	1981	2027	1946	1935	1935	1958	1992	1981	2027	2027	2280
67	2142	2096	1969	1992	1958	1889	1866	1912	1820	1797	1785	1854	1889	1889	1900	1877	2142
68	1992	1958	1877	1866	1843	1785	1762	1797	1658	1658	1670	1704	1774	1797	1808	1762	1992
69	1854	1854	1797	1785	1647	1635	1647	1670	1509	1555	1555	1566	1635	1704	1716	1681	1854
70	1728	1704	1681	1647	1532	1509	1509	1555	1417	1428	1463	1486	1532	1589	1555	1532	1728
71	1624	1589	1555	1509	1440	1394	1347	1405	1290	1301	1336	1382	1405	1417	1440	1405	1624
72	1497	1451	1394	1359	1359	1267	1267	1290	1163	1175	1198	1255	1313	1301	1290	1278	1497
73	1405	1347	1290	1278	1232	1186	1175	1221	1060	1060	1106	1152	1198	1163	1232	1198	1405
74	1267	1255	1163	1152	1129	1083	1060	1106	967	979	1025	1071	1117	1083	1094	1129	1267
75	1175	1163	1083	1071	1037	1002	979	1002	864	875	933	967	1013	1002	990	1025	1175
76	1094	1048	990	944	933	910	875	887	783	783	818	841	875	910	910	898	1094
77	1002	967	887	852	864	841	806	806	656	691	726	749	772	795	806	795	1002
78	910	852	806	783	760	737	703	726	587	633	668	679	691	726	737	726	910
79	783	795	726	714	703	668	622	645	530	541	553	599	622	645	645	645	783
80	726	691	656	633	610	587	576	564	472	484	495	518	541	541	541	541	726
81	633	622	587	541	530	530	507	495	403	415	426	472	472	495	495	484	633
82	564	530	495	484	461	449	438	426	357	380	380	403	415	438	449	449	564
83	495	472	449	438	403	403	392	392	299	311	322	346	357	357	369	369	495
84	438	403	392	369	346	346	334	334	242	253	276	288	288	311	311	311	438
85	357	346	334	311	288	288	288	299	184	207	219	230	242	253	242	242	357
86	322	299	288	265	242	242	242	242	150	161	150	173	184	196	196	184	322
87	253	242	219	196	184	184	173	196	127	127	127	138	138	127	138	127	253
88	196	173	161	150	138	138	138	150	115	127	127	138	127	127	115	115	196
89	127	115	115	115	115	115	115	115	104	115	104	127	127	127	115	104	127
90	115	115	104	104	104	115	115	104	81	81	81	92	104	104	104	104	115
91	92	104	104	104	104	104	104	92	69	69	81	81	69	81	92	81	92
92	92	92	92	81	81	81	81	81	81	81	69	81	69	69	69	81	92

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93	69	69	69	69	69	69	69	69	81	81	69	69	69	69	81	81	69
94	69	69	58	69	69	58	69	69	92	92	81	81	69	81	81	92	69
95	69	69	69	69	69	69	69	69	92	81	81	81	81	81	92	81	69
96	81	81	81	69	69	69	69	69	92	81	92	81	81	92	81	92	81
97	81	81	81	69	69	69	69	69	81	81	81	81	81	81	81	81	81
98	69	81	69	69	69	69	69	69	81	81	81	81	69	81	81	81	69
99	81	81	69	69	69	69	69	69	81	69	81	81	69	81	81	81	81
100	69	81	69	69	58	58	58	69	81	69	81	81	81	81	81	81	69
101	69	69	69	69	58	69	58	58	81	81	69	81	81	81	69	81	69
102	58	69	69	58	58	58	69	58	69	69	81	81	81	92	69	81	58
103	58	69	69	69	58	58	58	58	81	81	81	81	81	81	81	81	58
104	58	69	58	69	69	69	58	58	69	69	81	81	81	81	69	81	58
105	58	69	69	69	69	69	58	58	69	69	81	81	69	81	81	69	58
106	58	69	69	69	58	58	58	58	81	81	81	69	81	69	81	81	58
107	69	69	69	69	58	58	69	58	69	69	69	81	81	81	69	81	69
108	58	69	69	69	69	69	69	69	69	81	69	81	81	81	81	81	58
109	69	69	69	69	58	58	69	58	69	81	81	81	81	81	81	81	69
110	69	69	69	69	69	69	58	69	69	69	81	69	81	81	81	81	69
111	69	69	69	69	69	69	69	58	81	81	81	81	92	81	81	69	69
112	69	69	69	69	69	69	69	69	81	81	81	92	81	81	81	81	69
113	58	69	69	69	69	58	58	58	92	81	81	81	92	81	81	81	58
114	69	69	69	69	69	69	69	69	81	81	92	92	92	92	81	81	69
115	58	69	69	69	69	69	69	69	81	81	81	92	92	92	92	92	58
116	69	81	69	69	81	69	69	58	92	92	81	92	104	92	92	92	69
117	69	69	69	69	81	69	69	69	92	92	81	81	92	104	92	92	69
118	69	81	69	81	81	69	69	69	104	92	92	92	104	92	92	104	69
119	81	81	69	69	81	69	69	69	104	92	92	104	104	92	92	92	81
120	81	81	81	69	92	69	69	69	115	104	104	104	104	104	104	92	81
121	81	81	81	81	92	81	81	81	104	104	104	104	115	104	104	104	81
122	81	81	81	81	92	81	69	81	115	104	104	115	115	104	104	104	81
123	81	81	81	81	92	81	81	81	115	115	104	115	115	115	104	104	81
124	81	92	92	92	81	81	81	81	115	115	115	115	115	104	104	104	81

**Laboratory: Standard-Tech Co., Ltd. Testing Center**  
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125	92	92	81	92	104	81	81	92	115	115	115	127	115	115	115	115	92
126	92	92	92	92	92	92	92	92	115	115	104	115	115	115	115	115	92
127	92	92	92	104	104	92	81	92	115	115	104	115	115	127	115	115	92
128	104	104	104	92	104	92	92	92	115	127	127	127	127	127	115	115	104
129	104	104	92	104	104	104	92	104	115	127	127	127	127	127	115	127	104
130	92	115	104	104	104	104	104	104	127	127	127	115	127	127	127	127	92
131	104	115	115	104	115	104	104	104	127	138	138	127	127	127	127	127	104
132	104	115	104	104	115	115	104	104	138	138	138	138	127	127	138	138	104
133	104	115	115	104	104	104	115	104	138	138	150	138	127	127	127	127	104
134	104	127	115	115	115	115	115	104	127	150	150	138	138	127	150	138	104
135	115	127	127	115	115	115	115	115	138	150	150	138	138	127	138	138	115
136	127	127	115	115	115	127	115	115	150	150	138	150	138	138	127	138	127
137	115	127	127	127	115	115	127	127	150	150	138	138	150	150	138	150	115
138	115	138	115	115	115	115	127	127	161	161	150	150	150	138	138	150	115
139	127	138	127	127	127	115	127	127	161	161	161	161	161	161	138	150	127
140	127	127	127	138	127	127	138	127	161	161	150	161	161	161	150	150	127
141	127	127	127	127	138	127	138	138	161	161	150	161	161	161	150	161	127
142	127	127	127	138	138	127	127	127	173	161	150	161	161	161	138	150	127
143	138	127	138	138	150	127	138	138	173	173	161	161	161	161	138	150	138
144	138	138	138	138	150	150	138	138	161	173	161	161	161	173	138	150	138
145	138	138	138	127	150	127	138	150	161	173	150	161	173	161	138	150	138
146	138	127	150	138	150	138	138	150	161	173	150	161	173	173	138	161	138
147	150	138	150	138	150	138	138	150	173	173	150	161	173	150	138	150	150
148	138	138	138	138	150	127	138	150	173	173	161	161	173	161	127	161	138
149	138	138	127	138	150	127	127	161	173	173	150	161	173	161	138	150	138
150	127	127	127	150	150	138	138	161	173	173	161	161	173	161	127	150	127
151	138	127	127	150	150	138	138	161	173	173	150	173	173	161	127	138	138
152	138	127	127	150	150	150	127	138	173	173	150	184	173	161	138	127	138
153	127	127	138	150	150	150	127	150	173	161	161	173	161	150	138	150	127
154	138	115	138	150	150	150	127	161	161	161	138	173	161	150	138	150	138
155	127	127	150	127	161	138	127	138	161	161	161	184	150	150	138	150	127
156	150	150	150	138	161	127	127	161	161	138	161	173	150	150	138	127	150

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157	150	150	150	138	161	115	138	150	161	127	161	161	150	150	127	127	150
158	150	138	150	150	150	115	138	150	138	127	173	161	138	138	150	115	150
159	138	138	138	138	138	127	127	150	150	127	173	161	150	138	138	127	138
160	150	138	138	150	150	138	138	150	138	127	161	161	138	127	138	115	150
161	138	127	150	150	150	138	138	150	127	127	138	150	138	127	138	115	138
162	115	138	150	150	127	138	138	150	127	138	150	138	138	127	127	115	115
163	115	127	150	138	138	138	127	138	127	138	138	127	127	115	127	115	115
164	104	115	127	127	127	138	127	127	115	138	150	138	115	115	138	115	104
165	104	127	127	150	127	127	115	127	127	150	150	138	127	115	138	104	104
166	115	127	115	138	127	115	115	127	127	138	138	127	127	104	138	127	115
167	104	127	127	138	127	115	115	127	127	138	138	127	127	115	127	127	104
168	104	104	127	127	127	127	115	115	115	127	127	115	104	104	115	115	104
169	104	115	115	127	115	127	115	104	115	127	127	115	104	104	127	115	104
170	115	104	115	115	115	115	115	127	138	127	127	92	92	81	104	115	115
171	115	104	115	115	115	115	138	115	115	127	115	92	69	92	115	104	115
172	92	115	127	104	115	115	127	104	115	115	104	92	81	81	104	92	92
173	115	127	127	104	115	115	92	115	104	115	104	92	81	81	92	92	115
174	127	104	115	104	127	92	104	104	115	115	115	92	92	81	69	81	127
175	127	104	104	104	127	92	115	104	92	115	115	92	104	81	69	58	127
176	115	81	81	104	115	92	115	104	92	115	115	104	81	81	81	69	115
177	69	81	81	92	104	81	104	104	104	115	115	92	81	81	104	92	69
178	69	104	92	81	81	92	92	92	115	92	92	115	104	92	104	104	69
179	92	92	69	81	81	92	81	81	92	81	69	92	81	69	81	104	92
180	72	72	72	72	72	72	72	72	72	72	72	72	72	72	72	72	72

**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 \*\*\*\*\***