

LM-79-08 Test Report

For

LIGHT EFFICIENT DESIGN**(Brand Name:N/A)**

188 S. Northwest Highway Cary, IL60013

LED Luminaires

Model name(s): LED-8029M40-A

LED-8029-CW-E40-A

Remark: The two models are the same product with two model names

Representative (Tested) Model: LED-8029M40-A

Model Different: N/A

Test & Report By:

Garman Mo

Engineer: Garman Mo

Date: Apr.13,2017

Review By:

Tommy Liang

Manager: Tommy Liang

Note: 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

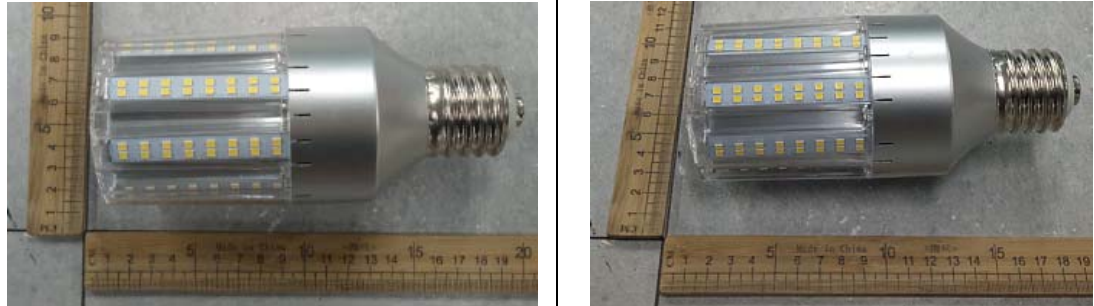
Address: Standard-Tech Building, No.6 Guanhong Road, Guangzhou Science City, Guangzhou 510663, China

Tel: 8620-3229 0320

Fax: 8620-32290422

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

1.1 Product Information:

Organization Name	LIGHT EFFICIENT DESIGN	
Brand Name	N/A	
Model Number	LED-8029M40-A;LED-8029-CW-E40-A	
SKU (if available)	N/A	
Type of Luminaire (for integral lamps, list base type and lamp type)	LED Luminaires	
Rated Voltage / Frequency	120-277Vac, 50/60 Hz	
Nominal Power	24W	
Rated Initial Lamp Lumen	--	
Declared CCT	4000K	
LED Manufacturer	Samsung	
LED Model	LM561B	
Sample Number	GZE161214-AL1	
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	Jan 16,2017
Date of Test	Jan 17,2017
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**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° vertical intervals and 22.5° 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)

Test date	2017-01-17	Test Ambient:	25.2 ° C
Test Orientation	As intended	Stabilization Time (min)	90
Model Number	LED-8029M40-A		

Electrical Measurement :

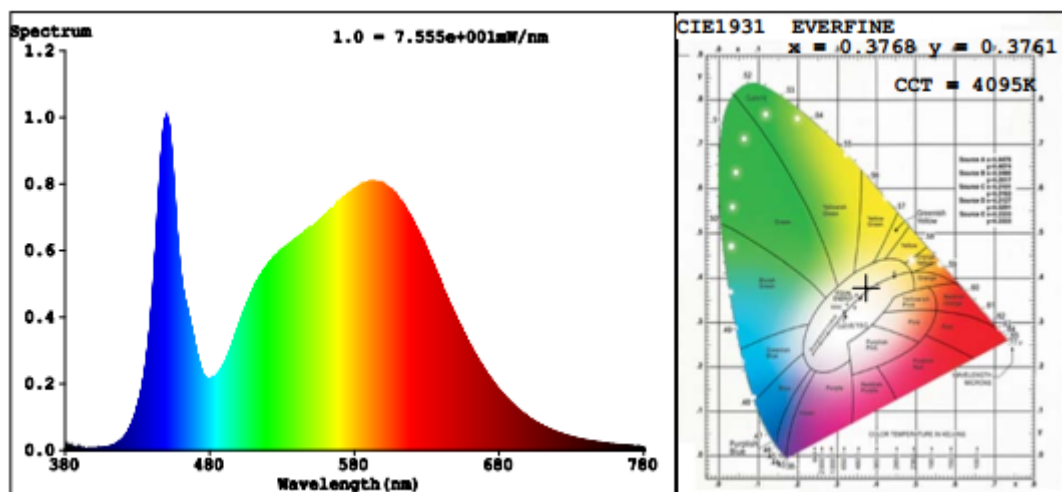
Sample No.	Voltage (Vac)	Frequency (Hz)	Current (A)	Power (W)	Power Factor
GZE161214-	120.0	60	0.2023	23.90	0.9847
AL1	277.0	60	0.0945	24.21	0.9248

Chromaticity Measurement - Sphere-Spectroradiometer Method :

Parameter	Result	Special Color Rendering Indices			
Test Voltage (V)	120.0	R1	80	R9	6
Frequency (Hz)	60	R2	88	R10	70
CCT (K)	4095	R3	93	R11	80
Duv	0.0008	R4	81	R12	58
Chromaticity (x, y)	x=0.3768 y=0.3761	R5	80	R13	82
Chromaticity (u', v')	u'=0.2230 v'=0.5007	R6	83	R14	96
Color Rendering Index (CRI)	81.9	R7	86	R15	74
R9	6	R8	64	--	--

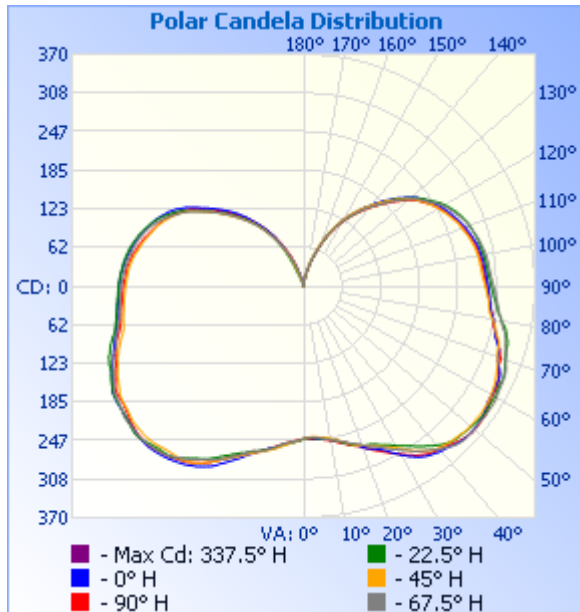
Photometric Measurement – Goniophotometer Method :

Parameter	Result	
Test Voltage (V)	120.0	277.0
Frequency (Hz)	60	60
Total Luminous (lm)	3374.0	3416.2
Luminous Efficacy (lm/W)	141.17	141.11
Beam Angle (°)	270.3	--
Center Beam Candle Power (cd)	244	--

Spectral Power Distribution & Chromaticity Diagram

Zonal Lumen Tabulation

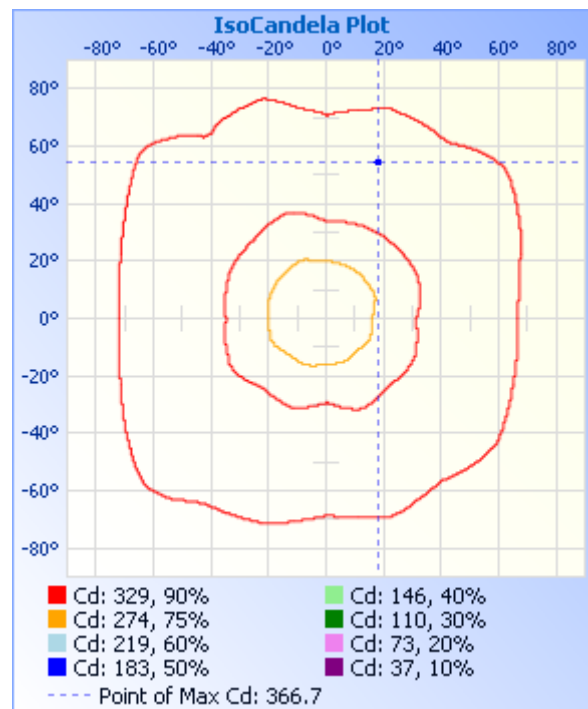
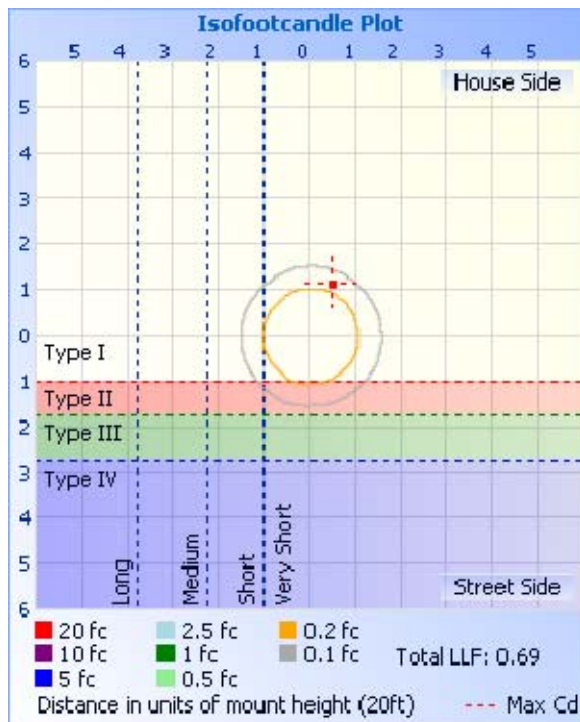
Zonal Lumen Summary		
Zone	Lumens	% Luminaire
0-30	236.7	7%
0-40	444.5	13.2%
0-60	1,032.2	30.6%
60-90	1,005.8	29.8%
70-100	985.0	29.2%
90-120	873.8	25.9%
0-90	2,038.0	60.4%
90-180	1,336.1	39.6%
0-180	3,374.1	100%

Lumens Per Zone					
Zone	Lumens	% Total	Zone	Lumens	% Total
0-10	23.9	0.7%	90-100	318.4	9.4%
10-20	75.8	2.2%	100-110	297.0	8.8%
20-30	137.0	4.1%	110-120	258.4	7.7%
30-40	207.8	6.2%	120-130	202.5	6%
40-50	271.7	8.1%	130-140	137.5	4.1%
50-60	316.0	9.4%	140-150	80.6	2.4%
60-70	339.3	10.1%	150-160	34.0	1%
70-80	338.3	10.0%	160-170	7.2	0.2%
80-90	328.3	9.7%	170-180	0.4	0%

Photometric Data


Illuminance at a Distance

	Center Beam fc	Beam Width
17.0ft	0.84 fc	
34.0ft	0.21 fc	
51.0ft	0.09 fc	
68.0ft	0.05 fc	
85.0ft	0.03 fc	
102.0ft	0.02 fc	



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	244	244	244	244	244	244	244	244	244	244	244	244	244	244	244	244	244
1	243	243	243	243	244	244	244	245	246	246	245	245	245	244	243	242	243
2	242	242	242	243	245	244	245	246	247	248	247	246	246	244	243	242	242
3	243	242	241	242	245	245	246	247	249	249	249	248	247	245	244	243	243
4	243	243	241	242	245	245	247	249	250	250	250	249	248	247	245	243	243
5	245	244	242	243	245	246	249	250	251	251	252	250	250	247	246	244	245
6	246	244	243	244	246	247	250	252	253	253	254	252	252	249	247	245	246
7	246	245	243	245	246	249	251	254	254	255	256	254	253	251	249	246	246
8	247	246	244	246	248	251	253	256	257	257	258	255	255	253	250	248	247
9	248	247	246	248	249	253	255	258	259	260	261	258	258	255	252	250	248
10	249	248	247	249	250	255	257	259	262	262	264	261	260	257	254	252	249
11	250	250	249	251	252	256	259	260	263	264	266	264	263	260	256	253	250
12	251	252	251	252	254	258	260	262	265	266	268	266	266	262	258	255	251
13	254	255	253	254	256	259	263	264	267	268	270	269	268	264	260	257	254
14	256	257	255	256	258	261	264	267	271	270	272	270	271	267	264	259	256
15	258	260	258	258	261	263	266	270	273	272	274	272	273	269	266	262	258
16	261	262	261	260	264	265	269	271	276	274	276	274	275	271	269	263	261
17	263	264	264	263	266	266	271	273	279	276	279	274	278	273	271	265	263
18	266	267	266	265	268	268	275	276	282	278	282	278	280	274	272	269	266
19	269	269	268	267	270	270	279	279	287	281	284	282	283	275	274	271	269
20	273	270	270	269	273	272	282	283	291	283	288	285	286	277	276	275	273
21	277	272	272	272	277	275	285	286	295	286	291	289	289	279	280	278	277
22	279	273	275	276	280	277	289	289	300	289	294	293	293	283	283	281	279
23	282	274	277	278	284	279	291	293	304	292	298	297	297	285	285	284	282
24	284	276	280	280	287	281	295	297	309	295	301	301	300	289	287	288	284
25	288	279	283	284	291	284	298	301	313	299	305	304	305	293	290	292	288
26	291	282	285	287	294	287	302	305	318	303	309	307	309	296	294	295	291
27	296	284	288	291	298	291	307	309	323	308	313	311	314	301	298	300	296
28	301	287	291	294	302	295	311	314	326	311	318	314	319	304	301	305	301
29	305	290	295	298	306	299	316	317	330	315	322	317	322	308	305	308	305

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>

30	311	294	298	301	310	303	320	321	332	318	326	320	327	311	309	313	311
31	315	298	303	305	313	307	325	324	335	321	329	323	329	315	314	316	315
32	321	300	307	309	318	311	328	327	338	324	332	326	333	318	318	320	321
33	325	304	312	313	322	314	333	329	341	328	335	330	335	323	324	323	325
34	329	308	317	318	326	318	336	332	343	331	337	332	338	327	328	327	329
35	332	312	321	321	329	321	339	336	345	335	339	336	340	331	332	330	332
36	335	316	326	325	332	325	342	339	347	339	339	339	342	336	335	334	335
37	337	320	329	328	334	330	343	342	348	342	340	342	344	339	337	337	337
38	339	324	333	332	336	334	345	344	350	345	340	344	346	342	339	341	339
39	341	328	335	336	338	337	346	347	351	346	341	347	348	345	340	343	341
40	343	331	337	339	339	341	347	350	353	347	342	350	349	347	341	347	343
41	344	336	338	342	341	343	347	352	354	347	342	351	351	349	342	350	344
42	346	338	340	345	343	345	348	353	355	349	344	352	353	350	343	353	346
43	348	341	341	348	345	345	349	355	356	350	346	354	354	350	344	356	348
44	350	344	342	351	347	345	350	356	357	351	347	354	355	351	345	358	350
45	352	345	343	353	350	345	351	357	357	353	348	355	356	352	347	360	352
46	353	346	344	355	352	345	352	358	357	355	348	356	356	354	348	362	353
47	355	346	346	355	354	346	353	358	357	357	348	356	355	356	349	363	355
48	355	347	347	355	355	348	354	358	356	358	348	356	355	358	350	364	355
49	356	348	348	356	356	349	354	358	356	358	348	356	355	358	350	365	356
50	356	349	348	356	357	350	354	358	355	357	348	355	353	357	350	365	356
51	355	350	348	356	357	351	354	358	355	356	348	355	352	356	350	365	355
52	355	352	348	356	357	351	354	359	354	354	348	355	351	355	349	364	355
53	354	352	349	356	356	351	354	358	353	354	347	355	349	354	349	365	354
54	353	353	349	357	356	350	354	358	353	353	345	355	348	354	349	366	353
55	352	354	349	357	356	350	354	357	352	352	344	354	346	354	348	366	352
56	351	353	348	357	354	350	353	357	352	351	344	351	345	354	347	366	351
57	349	353	348	357	353	350	351	356	351	351	344	350	344	353	345	367	349
58	348	353	348	357	351	350	350	355	351	351	343	349	344	352	344	365	348
59	347	353	347	357	350	350	348	353	351	350	342	348	344	352	344	363	347
60	347	353	346	356	348	350	347	354	350	350	340	348	344	352	344	361	347
61	346	353	345	355	348	350	347	354	349	349	337	346	343	352	344	360	346

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>

62	346	352	344	354	348	349	346	353	347	346	335	344	341	351	343	358	346
63	346	351	343	353	348	348	345	351	343	345	332	341	338	348	342	358	346
64	346	351	341	353	346	347	342	349	340	342	331	338	335	345	341	358	346
65	345	351	340	353	344	345	340	346	338	340	328	335	332	343	338	356	345
66	344	351	338	352	341	344	339	345	336	336	326	333	330	341	335	353	344
67	340	349	336	351	339	344	338	343	333	336	323	331	326	339	333	350	340
68	336	347	334	349	337	344	337	342	330	335	321	329	323	340	332	347	336
69	333	344	333	346	336	343	336	341	327	333	319	327	321	340	330	346	333
70	331	343	330	344	335	342	333	337	324	332	315	325	320	340	327	345	331
71	330	342	328	342	332	341	329	335	321	328	313	319	319	337	324	342	330
72	329	340	327	340	329	340	327	330	319	326	310	316	315	334	321	338	329
73	325	339	327	338	327	339	323	327	316	323	306	314	313	330	319	334	325
74	321	339	325	335	323	336	321	324	314	319	304	313	311	327	317	331	321
75	318	338	322	335	319	334	320	319	312	316	300	309	308	325	313	328	318
76	316	335	317	332	317	329	316	318	309	312	298	308	304	322	311	328	316
77	314	332	315	330	313	326	315	314	307	310	295	305	302	318	310	325	314
78	312	330	313	327	311	323	312	312	306	308	295	303	300	316	307	323	312
79	311	326	310	324	309	319	310	309	304	306	294	301	298	313	304	321	311
80	308	321	307	321	308	316	307	308	302	304	293	299	297	312	302	319	308
81	306	319	303	320	305	313	306	306	301	304	292	298	296	310	301	315	306
82	303	315	301	316	304	310	304	305	301	302	291	297	295	309	300	313	303
83	302	313	299	314	302	309	303	304	300	301	289	296	294	307	299	312	302
84	301	311	298	313	300	307	302	303	299	300	289	295	293	306	298	311	301
85	300	309	297	311	299	306	301	302	298	299	288	294	292	304	297	310	300
86	298	307	296	309	297	304	299	302	297	298	288	294	291	304	296	307	298
87	298	305	295	308	296	303	299	302	296	298	287	293	290	303	295	306	298
88	297	303	293	307	295	301	298	302	296	297	286	293	289	302	295	304	297
89	296	301	292	306	294	300	298	301	295	297	286	292	289	302	294	303	296
90	295	300	291	304	292	298	297	301	295	296	285	292	288	301	293	303	295
91	294	299	289	302	292	297	296	300	295	295	284	291	288	300	292	302	294
92	293	298	288	301	291	297	296	300	294	295	283	290	287	300	292	301	293
93	293	297	287	300	290	296	297	299	294	294	283	289	285	299	291	300	293

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>

94	292	296	286	299	289	295	295	298	292	293	282	288	285	298	291	299	292
95	292	295	286	298	289	294	295	297	291	292	281	288	284	298	290	298	292
96	291	294	285	298	288	293	294	296	290	292	281	287	284	297	289	298	291
97	291	294	284	297	287	292	293	295	289	291	280	286	282	296	289	298	291
98	290	293	284	297	287	292	292	294	289	290	278	285	281	296	288	298	290
99	289	293	284	296	286	291	291	293	287	289	277	284	280	295	287	297	289
100	288	292	283	296	285	291	290	291	286	288	276	283	278	295	286	296	288
101	288	291	282	295	284	290	289	290	284	286	274	281	277	294	285	295	288
102	287	291	281	293	284	289	288	289	282	285	272	280	275	292	283	294	287
103	286	290	280	292	283	288	286	287	281	283	270	279	273	291	282	293	286
104	285	289	279	291	282	286	285	285	280	281	268	277	271	289	280	292	285
105	283	288	278	290	281	285	284	283	278	280	267	276	269	287	278	291	283
106	281	287	276	288	279	284	282	282	276	278	265	274	267	286	276	289	281
107	280	286	275	287	277	282	280	280	274	276	263	272	265	285	274	287	280
108	278	285	273	285	275	281	278	278	272	274	261	270	263	283	272	286	278
109	277	284	271	283	274	279	277	276	270	271	258	268	261	281	270	284	277
110	275	282	270	282	272	277	274	274	268	269	257	265	259	278	268	283	275
111	273	281	268	280	270	274	272	272	266	267	255	263	257	275	267	282	273
112	271	279	267	278	268	271	271	269	264	265	253	260	255	273	265	281	271
113	269	278	265	276	266	269	268	267	262	262	251	257	253	270	262	279	269
114	267	276	262	273	264	266	266	263	260	259	248	254	251	267	260	277	267
115	265	273	260	271	262	263	263	261	257	255	246	250	249	264	258	274	265
116	263	271	258	268	259	260	261	257	254	252	243	247	246	260	256	270	263
117	260	268	256	266	257	257	258	254	251	248	241	243	242	257	253	268	260
118	258	266	253	263	255	254	255	250	248	244	237	239	240	252	251	265	258
119	256	263	250	260	252	250	253	247	245	241	234	235	237	249	248	261	256
120	254	260	249	257	250	246	249	243	241	236	232	231	234	245	244	258	254
121	251	257	246	254	247	242	246	239	238	232	227	228	230	240	242	254	251
122	248	253	244	250	244	239	244	236	233	227	224	223	227	236	239	250	248
123	245	248	240	245	241	234	240	232	229	222	220	218	223	233	235	246	245
124	242	245	237	242	237	231	236	228	225	216	215	212	220	226	232	242	242
125	239	240	235	237	234	227	232	223	219	210	209	207	215	221	228	239	239

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>

126	236	237	231	234	231	223	227	218	214	205	203	203	209	215	225	234	236
127	232	233	228	231	227	219	221	214	208	200	198	198	205	210	220	227	232
128	229	228	225	226	223	213	217	209	203	195	192	193	200	204	214	223	229
129	225	224	221	222	219	209	211	204	198	189	188	187	194	198	210	217	225
130	220	219	217	215	213	205	207	198	193	183	182	183	190	194	205	213	220
131	215	214	212	211	208	200	200	194	188	179	178	178	185	188	199	206	215
132	210	209	206	205	203	194	194	188	183	174	172	173	180	183	195	200	210
133	206	203	203	199	198	188	189	182	179	170	167	169	175	179	189	195	206
134	200	199	198	195	193	184	183	177	173	164	162	163	171	173	185	190	200
135	195	193	192	189	187	178	178	172	169	160	157	159	165	169	179	185	195
136	190	187	188	183	183	174	173	167	164	155	153	153	160	164	174	181	190
137	185	182	183	179	178	169	169	162	159	150	148	149	155	158	170	176	185
138	180	176	178	173	172	166	164	157	155	146	144	143	150	154	165	172	180
139	175	172	173	169	168	160	159	152	149	141	139	139	146	149	159	166	175
140	169	167	168	164	163	155	155	148	144	136	135	134	141	144	155	160	169
141	164	162	164	159	159	151	150	143	137	131	130	129	136	140	150	156	164
142	159	157	159	155	153	146	146	138	132	126	125	124	131	135	146	151	159
143	154	152	155	150	148	142	140	133	126	121	120	119	126	131	140	146	154
144	150	146	150	145	144	137	135	127	122	116	114	114	121	126	135	141	150
145	144	141	145	141	139	133	129	122	116	110	109	108	115	119	130	135	144
146	139	136	140	136	134	127	125	116	112	104	104	103	111	114	125	130	139
147	134	131	135	131	129	122	119	112	106	99	99	97	105	108	121	125	134
148	128	126	129	126	123	117	115	106	100	93	93	92	100	103	115	120	128
149	124	122	125	120	119	113	109	101	95	86	88	86	94	98	110	115	124
150	118	116	119	116	113	107	103	95	89	79	82	81	89	92	105	109	118
151	112	110	114	110	108	101	98	91	83	72	77	76	83	87	99	104	112
152	108	105	108	105	102	96	92	85	75	63	70	70	78	80	94	98	108
153	102	99	102	99	96	91	87	79	69	57	63	65	71	76	88	91	102
154	97	94	98	93	92	86	80	74	62	45	58	58	66	70	82	86	97
155	91	87	92	88	85	80	75	67	56	35	52	54	60	65	78	80	91
156	84	81	87	82	79	74	69	62	50	23	47	49	56	61	71	75	84
157	79	76	81	77	74	68	64	55	44	14	39	44	50	54	66	70	79

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>

158	72	71	74	71	67	63	58	51	38	8	32	39	45	49	59	64	72
159	66	65	69	65	62	57	52	46	31	5	25	35	41	45	52	59	66
160	59	61	62	61	56	51	47	42	26	3	19	31	35	38	47	53	59
161	53	55	56	55	51	47	42	37	21	2	13	28	30	30	41	47	53
162	49	51	51	49	47	42	37	32	19	2	9	23	22	25	37	44	49
163	44	46	46	44	42	39	33	29	16	1	6	16	17	22	34	38	44
164	40	41	42	39	38	35	29	24	14	2	3	11	14	21	30	34	40
165	36	37	38	35	33	31	24	21	12	2	2	6	11	16	25	30	36
166	31	31	34	31	29	27	22	18	11	2	1	5	6	11	21	26	31
167	28	27	31	27	26	24	19	16	10	3	1	5	3	8	18	22	28
168	22	25	26	24	22	20	16	12	6	3	1	3	2	6	16	19	22
169	18	19	21	21	19	16	12	10	5	2	1	1	1	4	12	16	18
170	15	16	17	17	16	13	9	8	4	2	1	1	1	3	8	14	15
171	13	13	15	14	13	10	7	6	2	2	1	1	1	1	6	10	13
172	10	11	12	11	10	8	6	4	1	1	1	1	1	1	2	5	10
173	7	9	10	8	7	5	4	3	1	1	1	1	1	1	2	3	7
174	5	7	6	7	5	4	2	2	1	1	1	1	1	1	1	2	5
175	4	4	5	4	3	2	2	1	1	1	1	1	1	1	1	1	4
176	1	2	3	2	2	1	1	1	1	1	1	1	1	1	1	1	1
177	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
178	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
179	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
180	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1

3. Test Equipment

Equipment ID	Equipment Name	Last Calibration Date	Next Calibration Date
ST-R-331	2 meter Integrating Sphere	2016-07-01	2017-06-30
ST-R-327	Spectral analysis system HAAS-2000	2016-07-01	2017-06-30
D204	Standard Lamp	2016-07-12	2017-07-11
PF2010	Power Meter for Integrating Sphere	2016-07-01	2017-06-30
GO-R5000	Goniophotometer system	2016-07-01	2017-06-30
D908S	Standard Lamp	2016-07-12	2017-07-11
PF210	Power Meter for Goniophotometer	2016-07-07	2017-07-06
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 *******