

**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-8024E30C-A

Representative (Tested) Model: LED-8024E30C-A

Model Different: N/A

Test &amp; 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

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**1.1 Product Information:**

Organization Name	LIGHT EFFICIENT DESIGN	
Brand Name	N/A	
Model Number	LED-8024E30C-A	
SKU (if available)	N/A	
Type of Luminaire (for integral lamps, list base type and lamp type)	LED Luminaires	
Rated Voltage / Frequency	220-347Vac, 50/60 Hz	
Nominal Power	45W	
Rated Initial Lamp Lumen	--	
Declared CCT	3000K	
LED Manufacturer	SAMSUNG	
LED Model	SPMWHT541MXXXXXXXXXX	
Sample Number	GZE161214-AZ1	
Luminaire Aperture (for downlights)	--	in.
Luminaire Length	--	mm
Luminaires Width	--	mm
Number of Units (modular products)	N/A	s
<b>Photo</b>		
		

**1.2 Test Specifications:**

Date of Receipt	Jan 16,2017
Date of Test	Jan 17,2017
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 277 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 277 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 277 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-8024E30C-A		

**Electrical Measurement :**

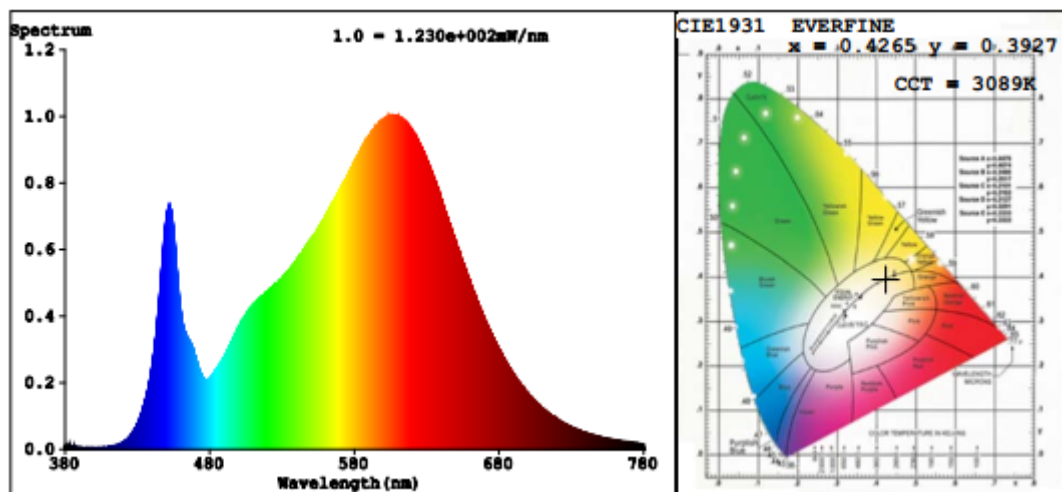
Sample No.	Voltage (Vac)	Frequency (Hz)	Current (A)	Power (W)	Power Factor
GZE161214-	277.0	60	0.1696	44.50	0.9473
AZ1	347.0	60	0.1363	44.37	0.9381

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

Parameter	Result	Special Color Rendering Indices			
Test Voltage (V)	277.0	R1	85	R9	22
Frequency (Hz)	60	R2	94	R10	85
CCT (K)	3089	R3	96	R11	83
Duv	-0.0031	R4	84	R12	76
Chromaticity (x, y)	x=0.4265 y=0.3927	R5	85	R13	87
Chromaticity (u', v')	u'=0.2487 v'=0.5153	R6	92	R14	99
Color Rendering Index (CRI)	85.5	R7	84	R15	79
R9	22	R8	65	--	--

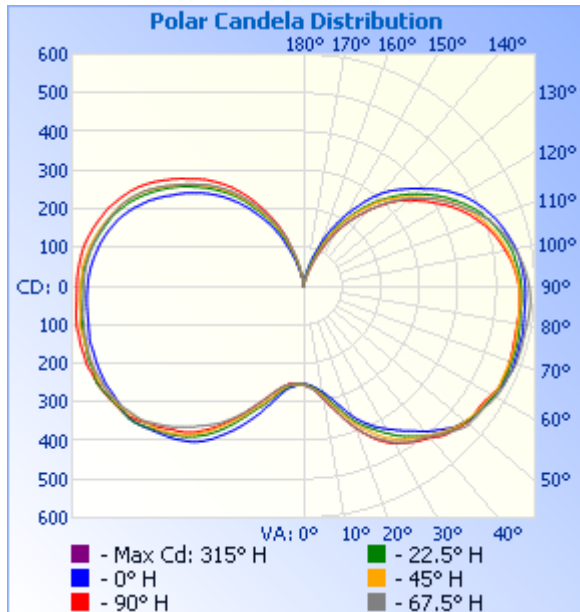
**Photometric Measurement – Goniophotometer Method :**

Parameter	Result	
Test Voltage (V)	277.0	347.0
Frequency (Hz)	60	60
Total Luminous (lm)	5879.2	5865.7
Luminous Efficacy (lm/W)	132.12	132.20
Beam Angle (°)	281.6	--
Center Beam Candle Power (cd)	254	--

**Spectral Power Distribution & Chromaticity Diagram**

**Zonal Lumen Tabulation**

Zonal Lumen Summary		
Zone	Lumens	% Luminaire
0-30	299.3	5.1%
0-40	594.7	10.1%
0-60	1,506.4	25.6%
60-90	1,814.7	30.9%
70-100	1,856.2	31.6%
90-120	1,670.4	28.4%
0-90	3,321.2	56.5%
90-180	2,558.4	43.5%
0-180	5,879.6	100%

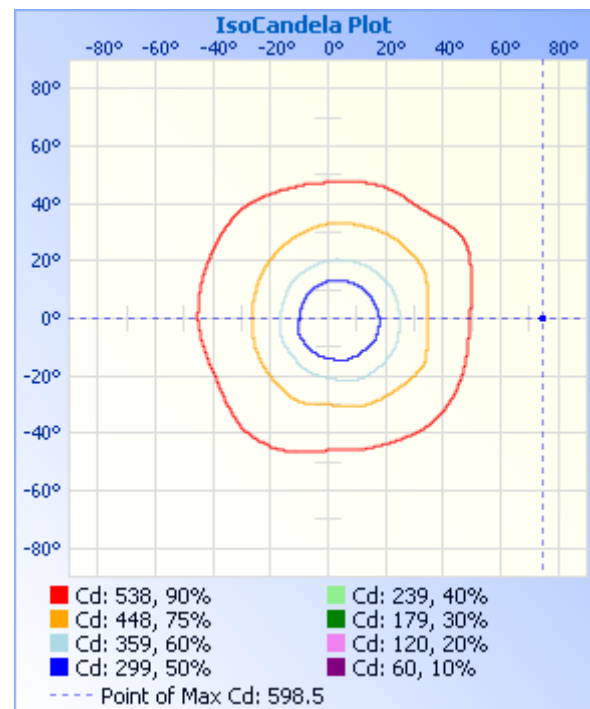
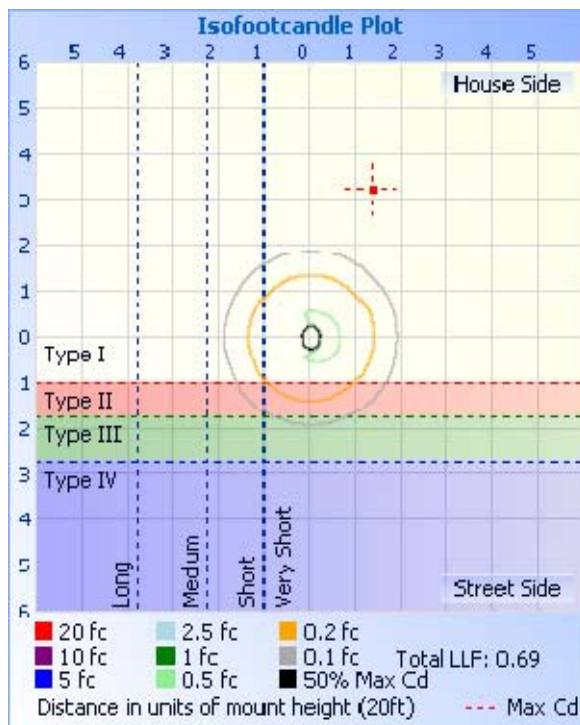
Lumens Per Zone					
Zone	Lumens	% Total	Zone	Lumens	% Total
0-10	25.3	0.4%	90-100	615.4	10.5%
10-20	89.6	1.5%	100-110	567.6	9.7%
20-30	184.5	3.1%	110-120	487.4	8.3%
30-40	295.3	5.0%	120-130	380.0	6.5%
40-50	406.4	6.9%	130-140	265.8	4.5%
50-60	505.4	8.6%	140-150	157.5	2.7%
60-70	573.9	9.8%	150-160	68.3	1.2%
70-80	613.5	10.4%	160-170	15.5	0.3%
80-90	627.3	10.7%	170-180	0.9	0%

**Photometric Data**


**Illuminance at a Distance**

	Center Beam fc	Beam Width	
17.0ft	<b>0.88 fc</b>	<b>34.0 ft</b>	<b>18.7 ft</b>
34.0ft	<b>0.22 fc</b>	<b>68.0 ft</b>	<b>37.3 ft</b>
51.0ft	<b>0.10 fc</b>	<b>102.0 ft</b>	<b>56.0 ft</b>
68.0ft	<b>0.06 fc</b>	<b>136.0 ft</b>	<b>74.6 ft</b>
85.0ft	<b>0.04 fc</b>	<b>170.0 ft</b>	<b>93.3 ft</b>
102.0ft	<b>0.02 fc</b>	<b>204.0 ft</b>	<b>112.0 ft</b>

■ Vert. Spread: 90.0°  
 ■ Horiz. Spread: 57.5°



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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	254	254	254	254	254	254	254	254	254	254	254	254	254	254	254	254	254
1	254	256	257	256	258	255	254	254	255	254	255	254	254	252	252	253	254
2	255	257	258	260	260	257	256	255	255	254	254	253	253	251	251	253	255
3	256	258	260	263	262	260	258	257	256	255	254	253	253	251	251	254	256
4	257	260	263	264	263	262	260	259	257	256	254	253	252	252	252	254	257
5	260	263	266	268	267	264	262	261	259	257	255	253	252	253	255	256	260
6	263	266	268	272	271	267	265	264	261	258	256	254	253	254	257	258	263
7	266	270	273	276	276	271	268	266	263	260	258	256	254	256	258	261	266
8	269	274	277	282	282	274	273	270	265	262	259	258	255	258	261	265	269
9	274	278	283	288	289	279	278	277	269	265	262	259	257	261	264	268	274
10	277	284	289	296	296	286	284	281	274	268	266	260	261	266	269	273	277
11	282	289	295	302	305	294	293	287	280	273	268	263	264	268	273	277	282
12	287	297	304	312	314	303	299	294	286	279	273	266	268	271	277	283	287
13	295	305	311	320	321	310	309	300	294	284	279	272	271	275	283	289	295
14	300	312	321	327	331	321	318	311	301	291	285	277	277	280	287	295	300
15	308	321	330	338	338	331	329	318	311	296	293	281	283	288	293	303	308
16	317	329	337	347	349	339	340	327	319	303	299	288	288	295	300	309	317
17	325	339	347	359	360	350	349	338	327	312	306	296	294	301	306	317	325
18	334	350	355	370	369	361	360	346	338	319	314	302	304	307	314	326	334
19	345	357	366	378	380	370	371	355	348	328	321	309	309	315	323	334	345
20	353	367	376	389	391	381	380	363	357	334	328	318	317	325	331	344	353
21	363	376	384	397	399	392	389	373	367	342	335	326	325	331	341	351	363
22	372	383	394	407	409	401	397	383	376	350	342	335	333	340	349	361	372
23	379	391	401	416	417	411	406	391	386	359	352	342	343	347	359	371	379
24	387	397	410	423	428	419	415	401	396	369	361	351	352	356	367	378	387
25	393	405	417	432	435	429	423	409	405	378	372	361	364	364	374	386	393
26	401	411	427	438	444	438	432	418	415	390	380	369	372	371	381	392	401
27	408	419	434	446	450	445	439	426	423	401	389	379	382	380	387	399	408
28	414	426	442	452	458	453	448	432	434	409	399	386	392	387	395	405	414

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29	421	434	450	460	465	460	454	439	442	421	407	395	401	395	401	412	421
30	426	440	456	467	469	468	462	445	452	430	418	403	411	402	408	418	426
31	432	448	463	471	475	474	469	452	462	440	427	412	419	411	414	425	432
32	438	456	467	477	479	480	474	457	470	448	438	419	431	417	422	431	438
33	445	462	473	482	484	485	479	464	479	458	446	427	439	424	428	438	445
34	451	469	477	487	488	491	484	470	485	466	456	432	448	430	435	446	451
35	458	475	483	491	493	497	490	474	493	473	464	440	456	437	441	451	458
36	463	482	487	494	497	502	494	480	498	481	473	447	466	444	449	458	463
37	470	487	492	495	501	506	499	485	503	487	481	454	474	450	457	463	470
38	476	493	496	499	504	511	505	491	507	495	488	462	480	457	463	469	476
39	484	499	500	504	508	516	509	496	512	500	496	468	487	463	471	474	484
40	491	505	504	509	512	521	514	503	517	506	501	476	492	469	478	481	491
41	497	510	510	513	518	529	517	509	521	511	507	482	497	474	487	486	497
42	504	516	516	519	525	533	521	512	525	516	512	490	501	480	494	491	504
43	509	520	519	525	529	537	525	517	528	521	517	498	506	484	502	496	509
44	516	527	523	529	533	541	529	520	532	525	523	504	513	490	507	502	516
45	522	531	527	534	536	545	533	524	536	531	527	511	518	494	515	509	522
46	529	535	532	539	539	550	536	529	540	535	531	516	525	498	521	514	529
47	535	537	536	545	541	555	539	534	544	540	534	523	530	502	529	523	535
48	539	539	541	550	545	561	541	538	548	546	537	529	535	507	535	529	539
49	542	544	543	555	548	566	543	543	553	551	539	536	540	512	544	537	542
50	545	547	546	558	550	572	546	549	557	557	543	542	546	519	552	542	545
51	549	550	548	558	552	578	549	555	561	561	547	546	552	524	557	547	549
52	553	552	550	559	553	581	552	561	564	565	550	550	557	530	562	552	553
53	556	555	552	561	553	585	555	566	568	567	555	552	563	538	565	559	556
54	558	557	555	562	553	587	558	571	569	569	559	555	567	542	570	564	558
55	558	560	557	563	553	588	560	575	569	570	563	559	571	549	574	569	558
56	559	562	558	564	553	588	561	577	569	571	566	563	573	553	579	570	559
57	561	564	559	566	555	588	560	580	568	573	570	565	575	559	583	570	561
58	563	566	560	570	557	587	560	581	567	575	572	567	576	561	588	570	563
59	566	568	562	572	560	587	561	582	567	577	572	570	579	562	589	570	566
60	567	569	564	575	562	587	561	584	567	580	573	572	582	562	590	570	567

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61	570	570	568	576	566	586	563	586	568	582	574	576	584	562	591	569	570
62	572	570	570	578	568	584	563	587	570	585	576	578	586	562	592	570	572
63	576	571	570	579	570	583	565	588	571	587	578	579	588	563	592	570	576
64	578	572	569	580	571	584	565	588	572	590	581	579	588	564	594	571	578
65	579	573	568	580	571	584	566	589	572	592	585	579	591	566	596	572	579
66	580	574	568	580	571	584	566	588	572	591	586	580	592	568	597	573	580
67	581	575	569	581	570	583	567	588	573	588	586	582	593	570	598	575	581
68	583	575	569	583	570	582	569	588	573	587	586	583	594	571	598	575	583
69	582	575	569	585	569	581	570	588	573	588	585	584	596	572	596	575	582
70	582	574	570	587	568	580	572	588	573	589	585	584	597	574	595	575	582
71	581	573	570	586	568	580	572	589	572	589	585	584	598	574	595	575	581
72	581	574	569	586	567	580	571	589	571	588	586	584	597	574	596	575	581
73	581	574	569	586	567	579	571	589	571	588	586	583	597	574	597	575	581
74	581	574	569	587	566	578	571	589	572	587	586	582	597	575	598	575	581
75	580	573	569	586	565	578	570	589	572	586	586	582	598	576	598	574	580
76	580	573	567	586	564	577	569	589	572	585	586	581	598	576	598	574	580
77	581	573	566	586	563	577	567	588	570	585	586	581	597	575	598	575	581
78	581	572	565	587	563	576	567	587	569	585	587	581	596	574	598	575	581
79	580	571	564	587	562	575	566	587	568	585	588	579	597	573	598	574	580
80	578	570	564	587	563	574	565	587	566	583	588	578	598	572	598	573	578
81	578	568	564	588	563	575	564	587	566	582	587	578	597	572	596	571	578
82	577	567	564	589	563	575	564	587	565	580	584	578	596	570	595	570	577
83	576	566	564	589	563	575	564	587	565	579	583	577	594	570	595	569	576
84	576	567	563	589	563	574	563	588	564	578	583	575	593	569	594	568	576
85	576	567	563	589	562	573	562	588	564	578	583	574	592	567	592	568	576
86	576	567	562	589	562	573	561	588	564	579	582	573	591	565	591	568	576
87	576	567	562	589	561	572	560	588	563	579	582	571	590	564	590	568	576
88	576	566	561	588	560	571	560	588	562	578	580	571	589	563	589	568	576
89	575	566	560	586	559	570	559	587	561	578	579	570	588	562	589	567	575
90	575	564	559	585	558	569	559	586	561	577	578	570	588	562	589	566	575
91	574	563	557	583	556	568	557	584	560	576	577	570	588	561	588	566	574
92	573	562	556	581	555	566	556	582	559	575	577	569	588	561	588	565	573

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93	571	561	554	578	553	564	553	580	557	574	576	569	587	560	587	564	571
94	570	559	552	576	550	562	551	577	556	572	576	568	586	560	586	563	570
95	568	558	550	573	548	560	548	575	554	570	575	567	585	559	584	562	568
96	567	555	547	570	545	557	545	571	552	568	573	566	584	557	583	560	567
97	565	553	545	567	542	554	543	568	550	565	571	564	583	556	581	559	565
98	563	552	542	564	538	551	539	565	548	564	569	562	582	555	580	558	563
99	561	550	539	560	535	549	537	560	546	562	567	560	581	553	578	557	561
100	558	548	536	556	531	546	533	556	543	559	564	559	579	551	575	555	558
101	556	544	533	552	528	543	529	551	541	556	562	557	577	549	573	552	556
102	552	541	530	548	524	539	526	546	538	553	559	555	575	547	570	550	552
103	549	537	526	544	520	536	522	542	535	550	556	552	573	544	568	546	549
104	546	533	523	539	517	532	519	537	532	547	554	550	569	542	565	543	546
105	542	529	518	534	512	529	516	532	529	544	550	547	567	539	562	539	542
106	540	525	515	530	508	525	512	527	525	541	547	544	564	536	559	535	540
107	536	522	510	525	503	520	508	523	521	538	543	541	561	534	555	532	536
108	532	517	505	519	498	516	503	518	517	534	540	538	558	530	552	528	532
109	529	513	501	513	492	510	498	514	514	531	536	535	554	527	548	526	529
110	524	508	495	507	487	505	493	509	509	528	532	531	551	524	545	522	524
111	520	504	491	500	482	498	489	505	505	524	528	528	548	521	541	518	520
112	515	500	485	492	475	493	483	499	499	519	524	524	544	517	538	514	515
113	511	494	481	486	470	486	478	493	494	514	522	521	539	513	533	509	511
114	505	488	474	478	464	480	471	488	488	509	517	517	535	509	528	505	505
115	500	481	468	470	457	472	465	481	483	505	514	513	530	504	524	500	500
116	495	475	463	463	451	464	458	476	475	499	508	508	525	500	518	495	495
117	489	469	456	457	443	457	452	468	469	493	503	503	520	494	512	488	489
118	484	461	451	449	437	449	444	461	463	487	496	498	516	490	508	483	484
119	478	455	443	441	429	443	436	454	458	481	490	491	510	482	501	477	478
120	472	446	436	435	422	435	428	446	449	474	484	486	505	475	496	469	472
121	464	441	429	426	413	428	421	439	443	467	479	479	499	470	489	462	464
122	457	434	421	420	405	419	413	432	434	461	470	472	492	463	482	454	457
123	450	425	414	411	399	412	405	425	428	453	462	464	486	457	476	447	450
124	442	419	405	404	391	404	398	416	419	447	455	457	478	450	468	440	442

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125	435	410	398	395	384	396	389	410	412	439	446	449	471	444	461	432	435
126	425	404	389	385	375	386	383	402	406	433	439	442	463	437	453	426	425
127	418	395	381	378	368	378	375	395	398	424	431	433	456	428	445	418	418
128	409	387	374	369	359	369	367	387	391	418	424	425	447	422	437	411	409
129	400	379	365	362	351	359	359	380	382	409	415	418	440	413	428	402	400
130	393	371	359	352	345	351	352	370	375	401	409	410	432	406	421	394	393
131	385	364	350	343	337	341	344	363	367	394	400	403	424	398	412	387	385
132	378	354	344	333	330	333	336	354	361	384	393	394	416	390	405	379	378
133	369	346	336	323	321	322	327	346	353	377	386	387	407	383	396	371	369
134	361	336	327	315	313	314	320	337	345	368	378	379	400	374	388	363	361
135	354	328	320	304	301	304	310	329	336	361	369	372	392	367	382	356	354
136	346	319	312	295	291	296	302	319	328	351	362	364	385	358	373	347	346
137	339	309	304	283	283	284	292	311	319	343	353	357	378	351	366	338	339
138	331	301	294	273	272	276	283	301	311	334	346	348	369	341	357	330	331
139	321	290	285	265	263	264	273	293	301	326	335	341	360	333	350	320	321
140	313	282	274	253	252	255	264	283	293	317	327	332	352	326	341	311	313
141	302	272	263	244	242	244	252	274	283	309	317	324	343	316	331	301	302
142	293	262	254	233	233	235	240	263	274	299	309	314	335	308	323	292	293
143	281	253	244	222	222	225	231	253	263	290	299	306	324	298	312	281	281
144	271	241	235	213	213	216	220	242	255	279	290	295	316	289	303	270	271
145	259	232	225	203	202	205	212	231	244	270	279	287	304	279	292	262	259
146	247	220	215	196	192	195	201	223	233	259	270	275	295	269	282	251	247
147	238	209	206	186	183	183	193	211	224	249	259	267	284	260	270	242	238
148	226	201	195	174	171	171	183	203	214	237	250	256	274	249	257	231	226
149	217	192	183	164	163	161	176	191	205	227	238	247	262	240	245	220	217
150	206	181	174	152	152	149	165	182	194	216	227	236	252	229	233	211	206
151	194	171	162	141	138	140	155	171	186	208	218	227	239	214	223	201	194
152	185	159	154	132	130	131	142	158	175	197	207	216	230	201	212	192	185
153	173	147	144	122	117	123	129	149	166	187	198	208	217	188	200	183	173
154	164	139	133	114	104	111	119	136	154	178	188	197	207	175	190	172	164
155	153	129	122	102	96	101	108	127	146	167	178	185	195	160	178	161	153
156	142	120	108	91	86	89	100	115	134	158	166	177	186	146	168	149	142

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

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157	133	110	97	82	78	79	91	106	121	144	156	167	174	136	154	138	133
158	119	98	84	73	69	71	84	95	111	134	147	159	163	123	139	130	119
159	106	89	73	65	60	64	75	89	101	121	137	147	151	112	126	118	106
160	97	77	66	57	52	57	66	79	93	113	123	137	138	104	111	108	97
161	88	69	55	48	44	49	55	70	82	102	108	122	127	93	95	98	88
162	80	62	41	40	35	42	48	60	75	93	102	111	112	84	85	89	80
163	72	54	33	31	30	36	42	52	67	85	92	100	100	78	76	81	72
164	62	47	23	23	23	30	33	46	59	74	82	88	86	71	69	71	62
165	53	39	19	17	19	24	29	36	49	64	73	81	76	65	61	63	53
166	45	33	16	9	13	19	23	31	41	56	69	74	62	55	58	56	45
167	38	28	12	6	8	15	18	25	37	50	57	66	50	48	53	46	38
168	33	21	11	2	5	11	14	21	30	41	48	54	41	44	45	40	33
169	27	17	9	2	4	8	11	16	24	35	41	46	33	35	39	34	27
170	22	14	7	2	3	5	9	13	20	27	34	37	30	30	32	28	22
171	17	11	5	2	2	4	6	10	16	23	29	29	23	24	24	22	17
172	13	8	2	2	1	3	4	7	12	18	23	22	18	18	19	16	13
173	9	6	2	1	1	2	3	5	9	13	20	16	14	15	15	10	9
174	6	3	2	1	1	2	2	3	6	10	13	12	9	12	12	8	6
175	4	2	1	1	1	1	2	3	3	6	10	8	8	7	8	6	4
176	2	2	2	2	1	1	2	2	3	4	6	7	6	4	5	3	2
177	1	1	2	1	1	1	1	1	2	2	4	4	4	2	2	2	1
178	2	2	1	2	1	1	1	1	1	2	3	3	3	2	2	2	2
179	2	1	1	2	2	1	1	1	1	2	2	2	2	1	2	1	2
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 \*\*\*\*\***