



NVLAP LAB CODE 201011-0

## LM-79-08 Test Report

For

### LIGHT EFFICIENT DESIGN

(Brand Name:N/A)

188 S. Northwest Highway Cary, IL 60013

### LED Lamp

Model name(s): LED-8083E57  
LED-8083M57

Remark : The suffix of the model name“E” stand for E26;  
“M” stand for E39.

Representative (Tested) Model: LED-8083E57

Model Different :N/A

Test & Report By:

*Jack Luo*

Engineer: Jack Luo

Date: May.09,2016

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>

U.S. Department of Energy

**Lighting Facts™ Uniform LM-79 Reporting Template**
**Laboratory Information:**

Name of Test Laboratory	Standard-Tech Co., Ltd.
Date of Test Report	May.09,2016
Test Report No.	GZE160347-U3
Laboratory Contact Name	Tommy Liang

**Product Information:**

Organization Name	LIGHT EFFICIENT DESIGN		
Brand Name	N/A		
Model Number	LED-8083E57		
SKU (if available)	N/A		
Type of Luminaire (for integral lamps, list base type and lamp type)	LED Lamp		
Luminaire Aperture (for downlights)	--	in.	
Luminaire Length	--	mm	
Luminaires Width	--	mm	
Number of Units (modular products)	N/A	s	

**Integrating Sphere**
**Goniophotometer**
**Electrical Measurements:**

	Output	Output	
Input Wattage	--	30.72	W
Input Current	--	0.2592	A
Input Voltage (ac)	--	120.0	V
Power Factor	--	0.9875	
Off-State Power	--	0	W

**Photometric Characteristics**

Total Initial Lumen Output	--	3955.6	lm
Initial Lumen Efficacy	--	128.76	lm/w
Correlated color temperature / CCT	5606	--	K
Color rendering index / CRI	84.4	--	
R9 Value	9	--	
Duv	0.0027	--	
<b>Luminous Intensity Distribution</b>			
Center beam candlepower (if applicable)		28	cd
Beam angle (if applicable)		291.6	°
Zonal lumens in the 0°-60° zone		19.1	%
Zonal lumens in the 60°-90° zone	-----	31.6	%
Zonal lumens in the 90°-120° zone		31.3	%
Zonal lumens in the 120°-180° zone		17.9	%

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Test Specifications:	
Date of Receipt	: Apr.01,2016
Date of Test	: May.05,2016
Test item	: Total Luminous Flux, Luminous Distribution Intensity, Luminous Efficacy, Correlated Color Temperature, Color Rendering Index, Chromaticity Coordinate, Electrical parameters
Reference Standard	IES LM-79-2008 Electrical and Photometric Measurements of Solid-State Lighting Products ANSI C78.377-2008 Specifications for the Chromaticity of Solid State Lighting Products CIE 13.3-1995 Method of Measuring and Specifying Colour Rendering Properties of Light Sources CIE 15-2004 Technical Report Colorimetry IESNA LM-16-93 Practical Guide to Colorimetry of Light Source IESNA TM-16-05 Technical Memorandum on Light Emitting Diode (LED) Sources and Systems
Reference Work Instruction	QD25

### Test Methods

#### 1. Photometric and Electrical measurements – Light Distribution 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 Volts, 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. Photometric and Electrical Measurements – Integrating Sphere Method:

Photometric 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 Volts AC, 60Hz. It was stabilized before measurement was made. Chromaticity coordinates, correlated color temperature and color rendering index were calculated from the spectral radiant flux measurements taken at least 5 nm intervals over the range of 380 to 780 nm.

**1. Product Information:**

Brand Name	N/A
Model Number	LED-8083E57, LED-8083M57
Luminaire Type	LED Lamp
Rated Voltage / Frequency	120~277 Vac, 50/60Hz
Nominal Power	30W
Rated Initial Lamp Lumen	--
Declared CCT	5700K
LED Manufacturer	N/A
LED Model	N/A
Sample Receipt Date	Apr.01,2016
Sample Number	GZE160347-U3(5700K)

**Photo**



LED-8080E30



LED-8080M30

<b>2.1 Electrical, Photometric and Chromaticity Measurements</b> (Refer to Work Instruction QD25)	<b>IES LM-79 2008</b>
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<b>Test date</b>	2016-05-05	<b>Test Ambient:</b>	25.2 °C
<b>Test Orientation</b>	As intended	<b>Stabilization Time (min)</b>	90
<b>Model Number</b>	LED-8083E57		

### Electrical Measurement:

Sample No.	Voltage (Vac)	Frequency (Hz)	Current (A)	Power (W)	Power Factor	THD %
GZE160347	120.0	60	0.2592	30.72	0.9875	7.59
-U3	277.0	60	0.1223	30.55	0.9016	18.88

### Sphere-Spectroradiometer Method:

Parameter	Result
Test Voltage (V)	120.0
Frequency (Hz)	60
Color Rendering Index (CRI)	84.4
R9	9
CCT (K)	5606
Chromaticity (x, y)	x=0.3300 y=0.3442
Chromaticity (u', v')	u'=0.2040 v'=0.4787
Duv	0.0027

Special Color Rendering Indices			
R1	83	R9	9
R2	92	R10	81
R3	95	R11	81
R4	81	R12	62
R5	83	R13	86
R6	88	R14	98
R7	86	R15	78
R8	67	--	--

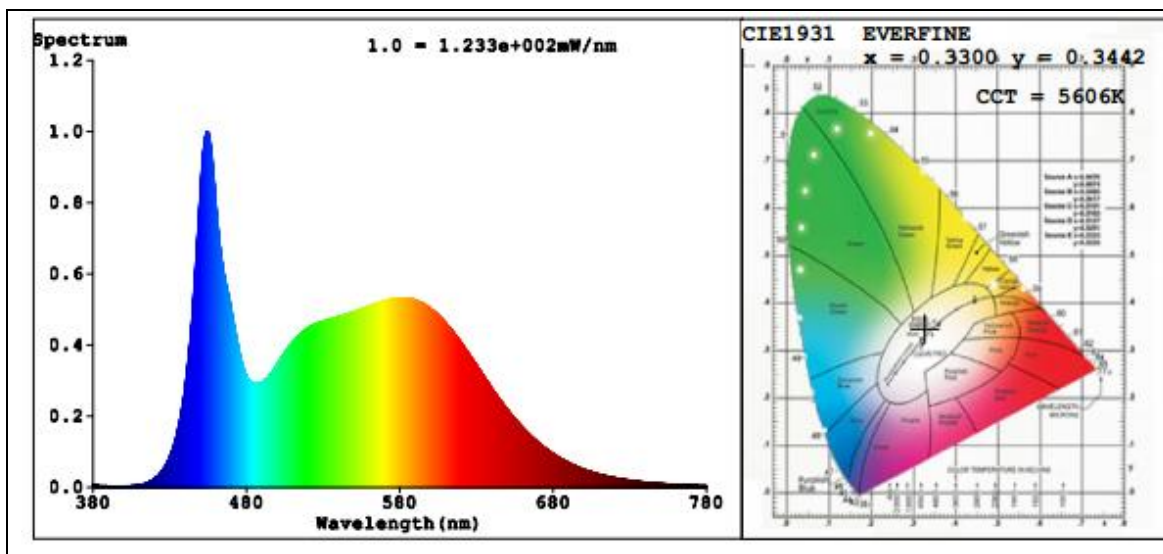
### Goniophotometer Method :

Parameter	Result
Test Voltage (V)	120.0
Frequency (Hz)	60
Total Luminous (lm)	3955.6
Luminous Efficacy (lm/W)	128.76
Beam Angle°	291.6
Center Beam Candle Power (cd)	28

### Goniophotometer Methodn :

Parameter	Result
Test Voltage (V)	277.0
Frequency (Hz)	60
Total Luminous (lm)	3909.6
Luminous Efficacy (lm/W)	127.97

**Spectral Power Distribution & Chromaticity Diagram**



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**Zonal Lumen Tabulation**

<b>Zonal Lumen Summary</b>		
Zone	Lumens	% Luminaire
0-30	99.8	2.5%
0-40	238.3	6%
0-60	757.4	19.1%
60-90	1,251.5	31.6%
70-100	1,330.6	33.6%
90-120	1,237.8	31.3%
0-90	2,008.9	50.8%
90-180	1,947.6	49.2%
0-180	3,956.4	100%

<b>Lumens Per Zone</b>					
Zone	Lumens	% Total	Zone	Lumens	% Total
0-10	3.7	0.1%	90-100	451.4	11.4%
10-20	24.9	0.6%	100-110	420.7	10.6%
20-30	71.3	1.8%	110-120	365.7	9.2%
30-40	138.5	3.5%	120-130	291.8	7.4%
40-50	218.5	5.5%	130-140	207.9	5.3%
50-60	300.6	7.6%	140-150	127.9	3.2%
60-70	372.3	9.4%	150-160	60.8	1.5%
70-80	425.2	10.7%	160-170	19.3	0.5%
80-90	453.9	11.5%	170-180	2.0	0.1%

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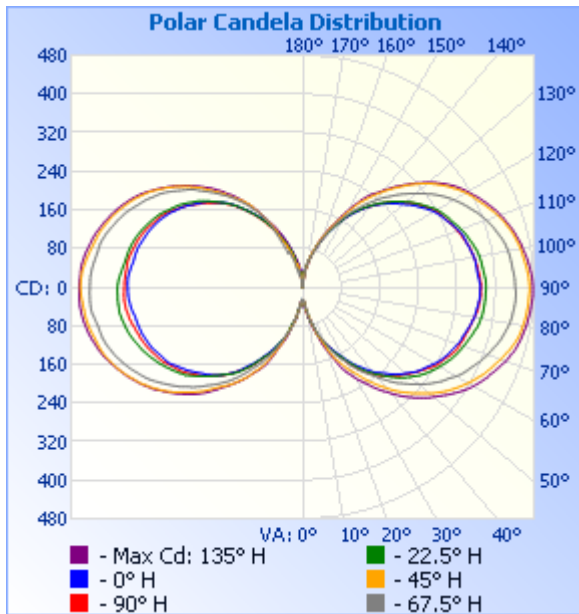
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### Photometric Data

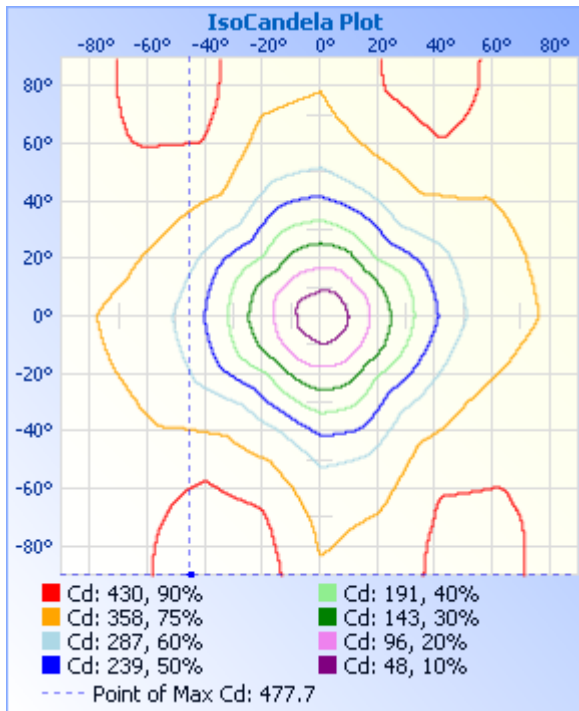


### Illuminance Plots

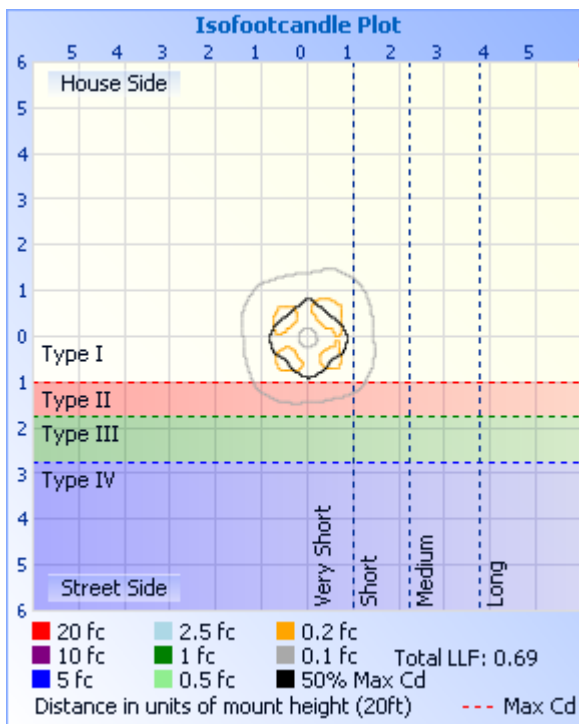
Illuminance at a Distance		
	Center Beam fc	Beam Width
17.0ft	<b>0.10 fc</b>	
34.0ft	<b>0.02 fc</b>	
51.0ft	<b>0.01 fc</b>	
68.0ft	<b>0.01 fc</b>	
85.0ft	<b>0.00 fc</b>	
102.0ft	<b>0.00 fc</b>	



### ISOCANDELA DIAGRAM



### ISOLUX DIAGRAM



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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	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28
1	28	28	27	27	27	27	27	27	28	28	27	28	28	28	28	28	28
2	27	27	27	27	27	27	27	27	27	27	27	27	28	28	28	27	27
3	26	26	26	26	27	27	27	27	26	26	26	26	27	27	27	27	26
4	26	26	26	28	31	31	28	27	26	26	26	27	27	27	27	26	26
5	32	31	29	31	33	35	33	29	30	30	27	28	29	27	27	28	32
6	36	34	35	33	39	39	35	33	32	33	32	30	34	32	29	31	36
7	42	41	39	39	43	45	43	37	39	37	35	35	36	37	34	35	42
8	45	48	41	41	44	44	49	48	44	44	39	36	42	42	39	42	45
9	46	48	48	44	50	47	54	52	45	44	48	45	47	50	41	45	46
10	51	49	56	51	59	54	57	54	50	46	54	55	49	52	48	47	51
11	61	57	59	61	66	65	63	59	60	54	59	57	55	52	58	53	61
12	68	68	62	69	67	67	71	70	68	64	63	61	66	59	67	63	68
13	69	74	67	71	71	70	78	81	69	70	71	70	74	71	70	72	69
14	72	76	74	74	77	75	84	87	72	73	77	81	77	79	75	77	72
15	79	81	85	81	86	84	90	89	78	76	83	88	80	81	80	78	79
16	89	89	93	87	95	94	96	91	86	82	90	92	86	86	91	84	89
17	98	97	101	95	102	103	104	96	94	90	96	97	95	92	102	91	98
18	105	106	107	102	107	108	114	103	101	100	102	100	103	101	111	99	105
19	111	112	113	106	112	114	123	113	107	108	110	105	112	111	117	109	111
20	116	118	121	110	118	120	132	122	112	114	120	113	119	119	123	116	116
21	121	123	131	116	123	126	139	131	117	119	129	120	125	126	131	122	121
22	126	129	141	122	128	132	146	138	122	124	138	127	131	133	140	125	126
23	130	135	152	130	132	139	156	144	128	130	147	135	136	139	152	130	130
24	135	139	159	138	136	145	167	150	134	136	156	143	141	145	162	136	135
25	140	145	166	147	142	151	178	156	140	144	166	150	145	151	174	142	140
26	146	149	172	155	149	155	188	164	146	150	176	158	151	156	182	151	146
27	151	155	179	161	155	160	196	173	151	156	185	166	155	159	189	160	151
28	156	161	187	167	161	167	202	180	157	161	191	173	161	164	194	169	156

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29	162	166	194	172	168	175	209	188	163	165	197	180	166	171	200	178	162
30	169	172	200	176	175	182	216	195	169	172	205	187	172	176	206	186	169
31	175	179	206	185	183	189	224	203	176	178	214	193	180	182	214	191	175
32	181	186	213	192	190	197	230	210	182	186	221	200	187	188	222	197	181
33	188	192	221	199	196	204	236	219	189	193	227	208	193	195	229	203	188
34	194	198	229	206	203	211	244	227	195	199	234	216	199	202	235	210	194
35	199	205	237	212	209	217	252	237	201	206	241	224	205	210	242	216	199
36	205	211	243	219	216	223	259	245	207	213	247	232	211	217	248	223	205
37	211	218	251	224	222	229	266	252	215	219	254	239	216	223	256	230	211
38	216	224	259	231	227	235	273	260	222	225	259	246	222	230	262	237	216
39	223	229	266	237	232	241	280	268	228	230	265	252	228	237	269	243	223
40	229	235	273	245	237	246	288	275	233	235	271	258	234	242	277	249	229
41	235	240	282	252	242	251	295	283	239	240	277	265	239	247	284	256	235
42	239	246	289	259	247	257	302	290	243	244	285	271	245	253	293	263	239
43	243	251	296	267	251	262	310	296	249	249	292	277	250	257	299	269	243
44	248	257	303	274	254	267	316	304	254	254	300	283	254	262	306	275	248
45	254	263	309	281	259	272	323	311	258	260	306	290	259	267	313	281	254
46	259	269	316	287	264	277	330	318	262	265	313	297	264	272	320	287	259
47	264	275	323	293	268	282	336	324	266	271	320	303	270	278	326	294	264
48	269	280	329	300	273	287	343	330	270	276	326	309	275	284	331	300	269
49	274	285	335	307	276	292	349	337	273	281	331	315	279	289	336	307	274
50	278	290	343	313	280	297	354	344	277	286	339	321	283	292	343	313	278
51	282	294	349	320	285	303	359	351	281	292	345	327	287	298	348	319	282
52	287	299	355	326	288	308	365	357	285	297	351	333	291	303	354	325	287
53	292	304	360	332	293	314	372	363	289	304	357	338	296	308	359	331	292
54	296	307	366	337	297	319	378	368	293	306	363	344	300	313	364	336	296
55	299	311	372	343	301	324	383	373	297	310	368	349	305	318	371	341	299
56	302	315	377	348	305	328	389	379	301	314	373	355	308	322	376	346	302
57	305	318	382	352	309	333	394	384	305	318	379	360	311	325	380	351	305
58	309	322	387	357	313	337	400	390	308	322	383	365	313	330	386	356	309
59	312	325	392	363	317	341	405	396	312	325	389	371	316	333	390	361	312
60	316	329	397	369	322	344	409	401	317	329	393	375	320	338	394	366	316

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61	320	332	402	374	324	348	414	405	320	333	397	379	324	342	398	371	320
62	323	335	406	378	326	352	418	409	322	336	401	384	328	345	403	375	323
63	326	338	410	382	329	355	422	413	324	340	406	388	331	348	407	379	326
64	329	341	415	385	332	358	426	417	326	342	410	392	333	351	411	382	329
65	332	344	419	389	336	361	429	420	328	346	414	396	335	354	415	385	332
66	333	347	422	393	339	364	433	424	331	349	418	400	338	356	419	389	333
67	336	349	426	398	342	366	437	427	334	352	421	403	340	358	422	392	336
68	338	352	429	401	344	369	440	431	336	355	424	407	343	361	426	396	338
69	340	354	433	405	346	372	444	434	338	358	428	410	346	363	429	400	340
70	343	356	437	409	347	375	448	437	340	360	431	414	348	366	433	403	343
71	345	358	440	412	348	377	452	440	342	363	434	417	350	368	437	406	345
72	347	360	444	414	350	379	454	443	344	365	437	419	351	370	440	410	347
73	348	362	448	418	351	380	458	446	345	368	439	422	353	372	443	413	348
74	350	365	451	422	352	382	460	450	347	371	441	425	354	374	445	416	350
75	351	367	454	425	354	384	462	452	348	373	442	427	356	377	447	419	351
76	354	368	457	427	356	386	464	454	349	374	443	429	358	379	450	422	354
77	356	371	459	429	357	388	466	456	350	376	446	430	360	381	452	424	356
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79	360	374	463	434	360	391	469	458	352	379	450	432	364	384	456	428	360
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81	362	377	465	437	364	395	472	462	354	382	453	435	366	387	460	430	362
82	363	377	466	439	365	396	473	463	357	384	454	438	368	388	461	431	363
83	364	378	467	439	367	397	474	465	358	384	455	440	369	390	462	432	364
84	366	378	468	440	367	398	475	466	359	384	456	442	370	390	463	433	366
85	367	379	469	441	368	398	475	468	360	384	457	442	371	390	464	433	367
86	368	380	469	442	369	398	476	469	361	384	458	442	371	391	464	434	368
87	368	380	470	442	370	398	477	470	362	384	459	442	371	391	464	435	368
88	368	380	470	443	370	398	478	471	362	384	460	442	371	391	463	435	368
89	368	380	471	442	369	398	478	472	363	384	460	442	370	391	463	434	368
90	369	380	471	441	370	398	478	472	363	384	461	442	370	391	463	434	369
91	368	380	470	441	370	398	477	472	363	383	461	441	370	391	463	434	368
92	367	380	470	440	369	396	477	471	363	382	460	441	370	390	462	433	367

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93	366	379	469	440	368	395	476	471	363	381	459	441	369	389	462	432	366
94	364	378	467	439	367	394	474	470	362	379	459	440	368	389	462	430	364
95	364	377	466	437	366	393	473	469	361	377	457	439	368	388	462	428	364
96	363	376	465	436	365	392	471	467	359	376	455	437	367	388	460	426	363
97	363	375	463	436	365	391	470	464	358	374	453	436	367	388	459	425	363
98	362	374	462	435	364	390	468	462	356	372	451	434	367	387	457	424	362
99	362	373	461	434	362	388	466	460	355	371	448	433	366	385	456	423	362
100	361	372	459	433	361	387	463	458	354	370	446	431	365	384	453	421	361
101	359	371	457	431	359	385	462	456	354	369	444	430	363	382	451	420	359
102	358	369	455	429	358	384	460	454	353	368	442	429	362	380	449	418	358
103	356	367	453	427	357	383	457	451	352	367	440	428	360	378	447	416	356
104	354	365	451	424	355	380	455	449	350	366	438	425	358	375	445	414	354
105	353	362	448	421	353	378	452	447	348	364	436	423	357	374	443	412	353
106	351	360	445	418	350	376	449	445	347	362	434	420	355	371	439	409	351
107	350	358	442	416	348	374	446	442	344	360	431	417	354	369	436	406	350
108	349	356	439	413	347	372	443	439	343	358	428	413	351	366	433	403	349
109	347	353	436	409	344	370	440	437	341	356	425	410	349	363	430	400	347
110	344	350	432	405	342	367	436	433	340	353	422	407	346	360	427	397	344
111	341	347	428	402	340	364	433	429	337	350	419	404	344	357	423	393	341
112	338	344	424	398	337	361	430	425	335	347	415	401	341	354	420	389	338
113	335	341	420	394	335	358	425	421	332	344	412	397	338	351	416	385	335
114	332	338	415	389	332	355	421	417	330	342	408	393	335	349	413	381	332
115	328	336	411	385	329	351	417	413	327	339	404	389	333	347	409	376	328
116	326	333	407	380	327	348	413	408	325	336	400	384	330	343	405	372	326
117	323	330	403	376	325	344	409	404	322	332	396	380	327	340	401	368	323
118	320	327	400	372	323	341	404	399	319	329	392	376	324	337	396	364	320
119	318	324	395	367	320	337	399	395	316	325	387	372	320	332	391	359	318
120	314	321	391	362	316	332	396	390	312	320	383	367	315	328	386	354	314
121	310	317	386	357	312	328	391	385	308	316	378	363	311	323	381	349	310
122	305	312	381	352	308	323	386	381	305	313	373	358	306	318	375	344	305
123	301	307	376	346	304	319	381	375	301	310	367	354	303	314	369	338	301
124	296	303	370	340	301	314	376	369	298	306	361	349	298	310	364	333	296

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

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125	292	299	365	334	297	310	370	363	294	301	356	343	294	306	358	328	292
126	288	295	359	328	292	304	364	356	289	296	350	337	289	301	352	322	288
127	283	290	353	321	289	299	358	350	284	291	344	331	284	296	345	317	283
128	278	285	347	315	283	293	351	343	280	286	338	325	279	292	340	311	278
129	272	280	341	309	278	288	344	335	277	283	331	319	274	286	333	306	272
130	268	275	334	302	273	283	337	328	273	278	325	314	270	282	327	300	268
131	263	270	327	295	269	278	330	322	269	272	318	308	266	277	320	294	263
132	259	265	320	289	265	273	322	315	265	266	311	302	261	273	314	288	259
133	254	260	312	282	260	267	315	308	259	261	304	294	256	267	308	281	254
134	250	255	305	276	254	261	307	301	254	255	296	287	251	261	301	274	250
135	245	249	296	269	248	255	300	294	249	249	288	280	246	256	294	268	245
136	239	243	289	261	242	249	292	287	244	244	280	273	242	250	287	261	239
137	235	238	281	255	236	243	285	278	239	239	273	266	237	245	281	255	235
138	230	232	274	249	230	237	278	270	234	233	266	260	232	239	273	249	230
139	224	227	266	242	224	231	269	262	229	227	259	254	226	233	265	243	224
140	219	221	258	235	219	225	262	255	223	222	252	247	220	228	259	236	219
141	213	215	249	227	213	218	254	248	216	216	244	241	213	222	250	229	213
142	207	209	242	221	208	212	247	242	209	209	237	234	207	217	243	223	207
143	201	204	234	213	202	206	241	235	203	203	230	227	201	211	236	217	201
144	195	198	227	206	197	199	235	228	197	196	224	219	195	204	228	210	195
145	189	192	218	198	191	193	227	219	191	190	218	213	189	198	220	204	189
146	182	186	211	192	184	187	218	209	185	184	212	205	182	191	212	197	182
147	176	180	201	185	178	179	207	201	179	178	205	197	176	185	204	190	176
148	170	173	191	177	171	172	197	192	173	172	196	190	169	178	195	183	170
149	163	165	182	170	164	166	188	185	167	165	185	182	162	171	187	176	163
150	157	157	173	162	158	159	178	178	161	158	174	173	156	164	177	168	157
151	150	149	164	155	152	152	169	170	155	151	165	166	148	156	168	161	150
152	143	143	156	147	145	146	159	165	148	144	156	157	142	148	161	154	143
153	136	137	147	140	139	139	150	159	141	138	148	144	136	142	152	148	136
154	129	131	140	132	132	132	143	154	135	132	139	121	130	136	146	140	129
155	123	125	134	125	126	125	136	150	128	124	130	107	123	129	139	133	123
156	117	119	127	119	119	118	128	144	123	118	115	91	115	122	132	126	117

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157	111	112	119	113	112	110	121	137	118	112	105	76	108	116	125	119	111
158	105	106	112	106	106	104	115	131	115	106	99	79	102	109	118	111	105
159	99	100	105	100	99	98	108	121	110	99	95	80	95	103	111	105	99
160	93	95	98	93	92	92	101	112	104	93	89	74	89	97	104	98	93
161	88	89	92	87	86	86	95	103	96	88	79	66	81	91	98	93	88
162	83	83	86	81	81	81	88	95	89	82	76	60	74	85	91	86	83
163	78	77	81	74	76	75	80	89	81	78	69	41	69	79	83	81	78
164	73	72	75	68	70	70	74	84	75	71	51	37	64	73	77	75	73
165	67	67	69	63	64	64	69	78	68	64	42	25	59	67	72	68	67
166	61	62	64	60	58	58	64	73	61	48	49	25	54	60	67	63	61
167	56	57	58	57	52	52	57	67	55	36	48	37	49	55	62	58	56
168	50	53	53	54	47	47	52	60	51	33	49	35	44	51	57	54	50
169	46	48	47	48	44	43	48	53	47	32	44	24	38	46	52	53	46
170	44	44	40	40	39	39	44	47	44	33	35	12	32	42	48	51	44
171	40	39	35	26	34	35	40	43	40	31	24	10	25	36	46	47	40
172	35	34	30	16	22	24	35	37	36	31	20	8	18	31	41	40	35
173	32	31	25	9	18	18	28	29	30	28	19	4	14	24	35	34	32
174	28	24	15	6	10	11	17	19	22	26	21	3	11	22	22	22	28
175	16	13	6	4	4	5	9	8	12	15	11	2	7	13	8	13	16
176	5	4	2	1	1	1	3	3	4	5	3	0	2	4	2	3	5
177	1	1	1	0	0	0	1	1	1	1	0	0	0	0	1	1	1
178	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
179	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
180	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

**3. Test Equipment**

Equipment ID	Equipment Name	Last Calibration Date	Next Calibration Date
ST-R-336	2 meter Integrating Sphere	2015-07-01	2016-06-30
ST-R-331	Spectral analysis system HAAS-2000	2015-07-01	2016-06-30
D204	Standard Lamp	2015-07-01	2016-06-30
PF2010	Power Meter for Integrating Sphere	2015-07-01	2016-06-30
EE-09	Goniophotometer system	2015-07-01	2016-06-30
D908S	Standard Lamp	2015-07-01	2016-06-30
PF210	Power Meter for Goniophotometer	2015-07-01	2016-06-30
ST-R-181A	Temperature Tester	2015-07-01	2016-06-30
Uncertainty Photometric Measurement (Sphere):1.74% Chromaticity Measurement(Sphere):14.3K Photometric Measurement(Goniophotometer):1.62%			

**\*\*\*\*\* END OF DATASHEET PACKAGE \*\*\*\*\***