



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-8087E57-A
LED-8087M57-A

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

Representative (Tested) Model: LED-8087E57-A

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-M2
Laboratory Contact Name	Tommy Liang

Product Information:

Organization Name	LIGHT EFFICIENT DESIGN		
Brand Name	N/A		
Model Number	LED-8087E57-A		
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	

Electrical Measurements:	Integrating Sphere	Goniophotometer	
	Output	Output	
Input Wattage	--	32.79	W
Input Current	--	0.2970	A
Input Voltage (ac)	--	120.0	V
Power Factor	--	0.9201	
Off-State Power	--	0	W

Photometric Characteristics

Total Initial Lumen Output	--	4225.4	lm
Initial Lumen Efficacy	--	128.86	lm/w
Correlated color temperature / CCT	5636	--	K
Color rendering index / CRI	84.4	--	
R9 Value	9	--	
Duv	0.0034	--	
Luminous Intensity Distribution			
Center beam candlepower (if applicable)	-----	1554	cd
Beam angle (if applicable)		109.7	°
Zonal lumens in the 0°-60° zone		81.2	%
Zonal lumens in the 60°-90° zone		18.2	%
Zonal lumens in the 90°-120° zone		0.5	%
Zonal lumens in the 120°-180° zone		0.1	%

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>

Test Specifications:	
Date of Receipt	: Apr.01,2016
Date of Test	: May.03,2016
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° vertical intervals and 22.5° 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.

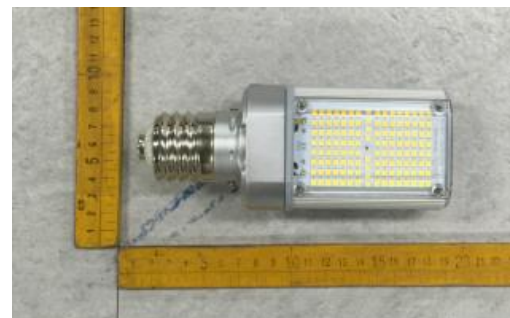
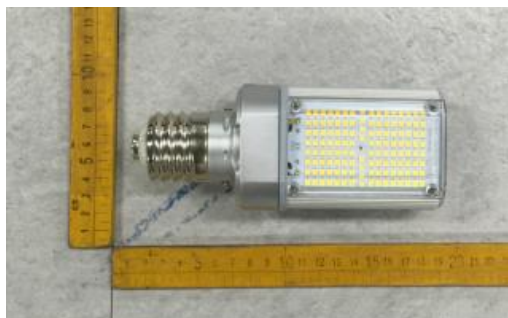
1. Product Information:

Brand Name	N/A
Model Number	LED-8087E57-A, LED-8087M57-A
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-M2(5700K)

Photo



LED-8087E40-A



LED-8087M40-A

2.1 Electrical, Photometric and Chromaticity Measurements (Refer to Work Instruction QD25)	IES LM-79 2008
--	-----------------------

Test date	2016-05-03	Test Ambient:	25.2 °C
Test Orientation	As intended	Stabilization Time (min)	90
Model Number	LED-8087E57-A		

Electrical Measurement:

Sample No.	Voltage (Vac)	Frequency (Hz)	Current (A)	Power (W)	Power Factor	THD %
GZE160347	120.0	60	0.2970	32.79	0.9201	11.76
-M2	277.0	60	0.1276	32.21	0.9110	17.93

Sphere-Spectroradiometer Method:

Parameter	Result
Test Voltage (V)	120.0
Frequency (Hz)	60
Color Rendering Index (CRI)	84.4
R9	9
CCT (K)	5636
Chromaticity (x, y)	x=0.3293 y=0.3450
Chromaticity (u', v')	u'=0.2033 v'=0.4791
Duv	0.0034

Special Color Rendering Indices			
R1	83	R9	9
R2	93	R10	81
R3	95	R11	81
R4	81	R12	62
R5	83	R13	87
R6	88	R14	98
R7	86	R15	78
R8	67	--	--

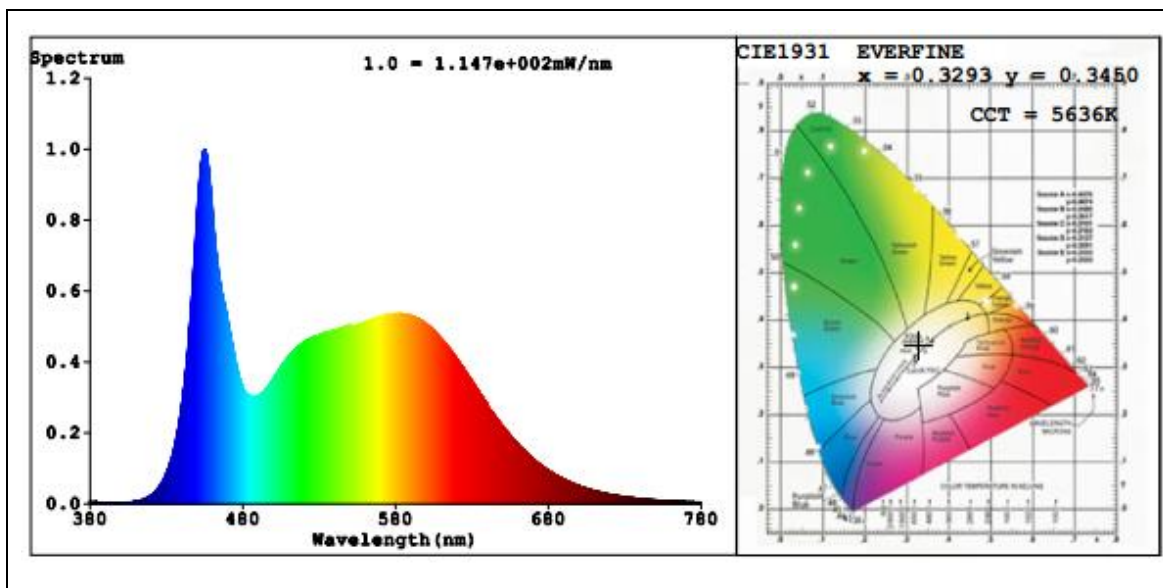
Goniophotometer Method :

Parameter	Result
Test Voltage (V)	120.0
Frequency (Hz)	60
Total Luminous (lm)	4225.4
Luminous Efficacy (lm/W)	128.86
Beam Angle°	109.7
Center Beam Candle Power (cd)	1554

Goniophotometer Methodn :

Parameter	Result
Test Voltage (V)	277.0
Frequency (Hz)	60
Total Luminous (lm)	4230.8
Luminous Efficacy (lm/W)	131.35

Spectral Power Distribution & Chromaticity Diagram



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

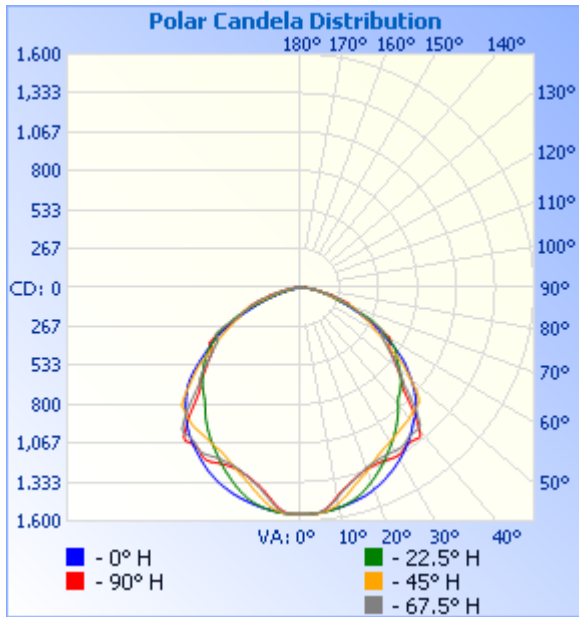
Tel: 8620-3229 0320 Fax: 8620-32290422 <http://www.standard-tech.com>

Zonal Lumen Tabulation

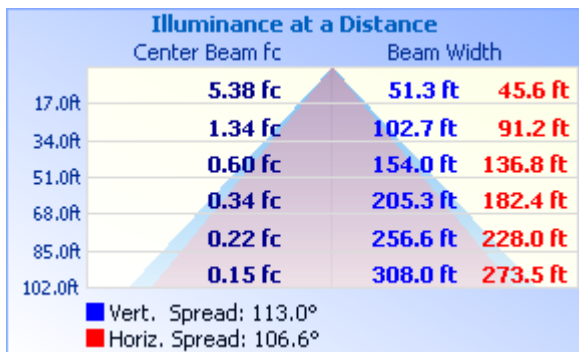
Zonal Lumen Summary		
Zone	Lumens	% Luminaire
0-30	1,153.1	27.3%
0-40	1,924.0	45.5%
0-60	3,430.1	81.2%
60-90	769.4	18.2%
70-100	283.4	6.7%
90-120	21.4	0.5%
0-90	4,199.5	99.4%
90-180	25.5	0.6%
0-180	4,224.9	100%

Lumens Per Zone					
Zone	Lumens	% Total	Zone	Lumens	% Total
0-10	145.5	3.4%	90-100	5.0	0.1%
10-20	400.5	9.5%	100-110	12.3	0.3%
20-30	607.1	14.4%	110-120	4.2	0.1%
30-40	770.9	18.2%	120-130	1.2	0%
40-50	810.3	19.2%	130-140	0.8	0%
50-60	695.7	16.5%	140-150	0.7	0%
60-70	490.9	11.6%	150-160	0.7	0%
70-80	221.9	5.3%	160-170	0.4	0%
80-90	56.5	1.3%	170-180	0.2	0%

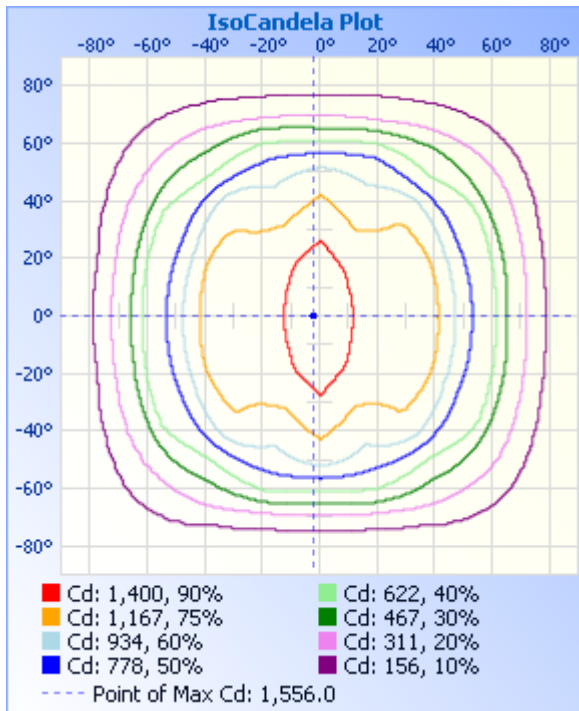
Photometric Data



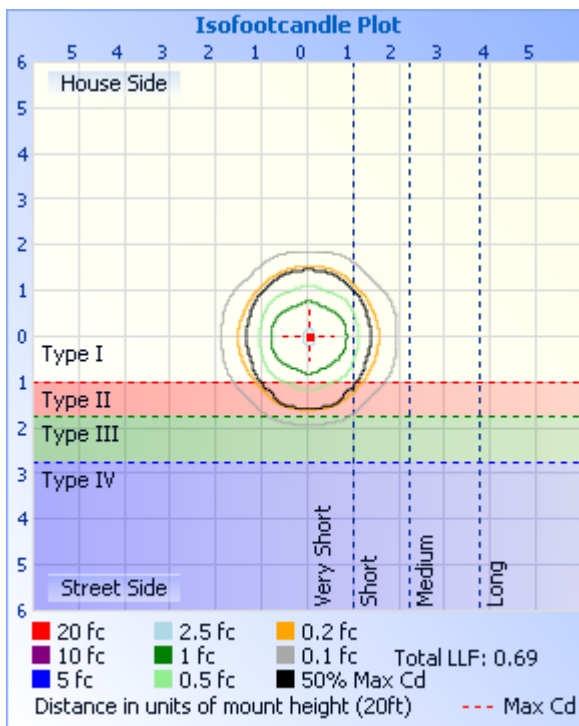
Illuminance Plots



ISOCANDELA DIAGRAM



ISOLUX DIAGRAM



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	1554	1554	1554	1554	1554	1554	1554	1554	1554	1554	1554	1554	1554	1554	1554	1554	1554
1	1553	1553	1554	1555	1554	1555	1554	1556	1554	1553	1554	1555	1554	1553	1553	1554	1553
2	1554	1552	1553	1554	1556	1554	1554	1555	1554	1554	1553	1554	1554	1554	1554	1554	1554
3	1552	1551	1553	1554	1556	1556	1555	1554	1553	1552	1553	1552	1551	1551	1552	1552	1552
4	1550	1550	1553	1551	1554	1554	1554	1554	1550	1550	1550	1547	1542	1546	1548	1551	1550
5	1548	1547	1551	1546	1546	1547	1551	1552	1547	1549	1545	1535	1529	1535	1544	1549	1548
6	1544	1545	1546	1537	1533	1537	1547	1550	1545	1547	1538	1520	1510	1519	1536	1545	1544
7	1543	1543	1538	1521	1515	1523	1540	1549	1541	1542	1527	1500	1486	1498	1522	1542	1543
8	1539	1539	1529	1501	1495	1502	1529	1545	1538	1539	1514	1477	1463	1476	1508	1537	1539
9	1534	1536	1516	1482	1475	1484	1515	1540	1534	1533	1496	1454	1440	1454	1489	1530	1534
10	1530	1530	1500	1462	1450	1462	1498	1536	1530	1527	1477	1433	1419	1432	1470	1524	1530
11	1527	1525	1484	1438	1430	1439	1481	1530	1525	1520	1458	1412	1400	1412	1451	1515	1527
12	1521	1517	1466	1420	1413	1421	1463	1523	1522	1511	1439	1394	1385	1395	1432	1505	1521
13	1517	1509	1449	1404	1398	1404	1445	1513	1516	1501	1421	1379	1372	1381	1413	1494	1517
14	1511	1500	1429	1389	1384	1390	1423	1504	1510	1490	1403	1366	1360	1369	1394	1481	1511
15	1506	1489	1410	1375	1371	1377	1406	1492	1505	1477	1384	1354	1349	1356	1378	1466	1506
16	1500	1478	1394	1361	1358	1362	1389	1480	1500	1463	1370	1341	1340	1343	1363	1450	1500
17	1495	1463	1379	1350	1349	1350	1374	1463	1493	1447	1356	1331	1333	1334	1349	1433	1495
18	1488	1448	1364	1338	1338	1338	1360	1448	1487	1431	1342	1324	1322	1327	1336	1417	1488
19	1480	1433	1350	1326	1328	1327	1346	1433	1480	1414	1330	1313	1320	1317	1322	1399	1480
20	1471	1417	1335	1314	1324	1316	1330	1414	1472	1397	1316	1307	1317	1311	1309	1382	1471
21	1462	1401	1320	1308	1319	1310	1316	1399	1464	1379	1301	1303	1318	1308	1296	1366	1462
22	1453	1384	1306	1302	1318	1305	1302	1382	1456	1363	1289	1301	1318	1307	1285	1347	1453
23	1443	1367	1292	1298	1316	1301	1289	1363	1446	1345	1278	1300	1318	1306	1274	1329	1443
24	1432	1350	1279	1294	1316	1299	1275	1344	1437	1326	1266	1298	1322	1304	1262	1313	1432
25	1421	1333	1264	1290	1316	1296	1261	1325	1425	1309	1255	1297	1328	1305	1255	1296	1421
26	1408	1314	1254	1290	1318	1295	1252	1306	1415	1290	1248	1299	1334	1307	1249	1279	1408
27	1398	1294	1244	1288	1322	1295	1245	1289	1403	1272	1242	1303	1342	1313	1242	1263	1398
28	1385	1276	1236	1289	1326	1297	1238	1271	1390	1255	1238	1308	1346	1317	1237	1247	1385

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	1372	1258	1230	1290	1330	1300	1233	1253	1377	1237	1233	1312	1346	1322	1232	1230	1372
30	1360	1241	1222	1292	1330	1303	1226	1237	1365	1219	1227	1317	1340	1323	1225	1213	1360
31	1345	1222	1215	1294	1328	1305	1221	1219	1350	1202	1222	1317	1328	1323	1221	1194	1345
32	1332	1204	1208	1294	1321	1306	1215	1201	1337	1184	1216	1313	1313	1317	1216	1176	1332
33	1317	1186	1200	1291	1309	1303	1208	1181	1323	1165	1213	1303	1306	1304	1213	1158	1317
34	1303	1167	1196	1283	1300	1295	1204	1161	1309	1146	1210	1289	1303	1291	1211	1140	1303
35	1288	1147	1189	1272	1300	1286	1200	1141	1296	1126	1206	1281	1304	1284	1209	1120	1288
36	1272	1127	1183	1265	1300	1281	1196	1122	1280	1107	1205	1275	1308	1278	1207	1098	1272
37	1255	1106	1179	1262	1303	1280	1192	1100	1265	1085	1203	1273	1314	1278	1206	1077	1255
38	1238	1085	1174	1259	1311	1279	1189	1077	1249	1062	1200	1275	1298	1282	1201	1058	1238
39	1219	1063	1169	1261	1305	1284	1186	1057	1232	1041	1194	1278	1255	1279	1192	1044	1219
40	1203	1039	1164	1263	1267	1286	1180	1037	1213	1021	1186	1263	1212	1250	1187	1032	1203
41	1189	1019	1155	1249	1220	1268	1176	1020	1195	1004	1181	1222	1164	1208	1181	1020	1189
42	1179	1003	1149	1208	1171	1223	1172	1005	1175	991	1176	1179	1104	1166	1169	1009	1179
43	1160	994	1147	1165	1112	1178	1167	992	1154	979	1164	1133	1050	1117	1161	1002	1160
44	1139	984	1140	1119	1057	1131	1163	978	1134	965	1153	1081	1005	1062	1155	993	1139
45	1121	969	1134	1066	1008	1076	1162	962	1113	951	1149	1027	971	1011	1131	978	1121
46	1098	956	1129	1016	969	1024	1151	946	1092	935	1125	978	960	966	1094	966	1098
47	1074	942	1106	967	958	975	1115	929	1069	920	1085	944	937	943	1056	952	1074
48	1049	925	1072	935	936	946	1072	914	1047	905	1045	928	899	922	1022	934	1049
49	1022	908	1033	916	896	933	1029	897	1023	889	1004	896	871	884	984	917	1022
50	995	888	990	879	870	896	986	880	997	872	968	859	845	852	948	899	995
51	966	868	956	847	842	859	950	863	964	856	931	829	822	822	916	883	966
52	938	849	918	817	821	830	911	847	929	838	899	800	796	797	877	870	938
53	910	830	885	790	794	802	881	829	890	819	859	775	772	771	826	861	910
54	883	813	840	763	769	776	835	813	851	800	803	748	750	748	782	853	883
55	852	800	785	737	746	749	782	795	814	780	760	724	742	724	744	839	852
56	818	790	743	713	728	724	742	779	778	762	721	700	735	700	708	819	818
57	779	779	704	691	719	700	705	757	746	740	685	679	734	690	673	794	779
58	739	754	667	668	716	679	669	729	715	713	651	672	734	682	642	767	739
59	698	721	632	655	713	667	635	702	680	689	617	667	727	678	616	740	698
60	657	688	601	647	711	662	606	680	640	667	589	667	692	677	592	706	657

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	622	659	575	640	691	658	578	660	597	645	560	666	632	667	568	667	622
62	589	634	552	634	635	654	548	631	557	614	530	648	582	626	545	626	589
63	559	606	529	617	582	637	518	587	521	575	500	593	540	568	523	588	559
64	527	579	504	567	539	587	488	543	488	537	473	535	498	519	504	554	527
65	492	546	476	515	497	535	462	502	453	503	454	491	468	478	490	519	492
66	451	510	452	472	459	490	444	464	410	467	444	449	443	441	475	479	451
67	411	467	436	434	434	449	436	424	369	427	433	416	423	414	454	432	411
68	378	417	419	399	413	413	423	375	337	380	417	392	401	393	423	383	378
69	352	371	403	377	391	389	402	332	307	336	386	373	382	374	385	342	352
70	321	335	378	357	358	369	370	297	272	300	346	349	373	349	347	311	321
71	284	302	340	326	348	337	326	262	241	262	308	324	344	334	311	284	284
72	263	265	297	298	344	306	287	227	214	227	271	316	310	317	275	252	263
73	256	236	256	301	308	309	250	201	183	201	238	291	279	284	249	231	256
74	229	227	231	281	273	292	221	175	160	174	215	259	235	255	223	224	229
75	200	208	206	245	222	257	198	151	133	152	188	221	231	212	200	202	200
76	179	181	174	195	213	204	165	132	110	130	164	185	222	202	190	181	179
77	160	165	175	181	224	179	158	114	87	112	161	191	168	184	179	158	160
78	150	147	172	184	159	193	155	96	72	94	145	156	168	143	152	151	150
79	126	140	140	133	148	142	129	85	55	81	118	130	142	142	134	139	126
80	116	123	122	129	140	125	100	74	42	70	101	125	134	116	114	119	116
81	95	112	109	108	119	117	98	59	29	57	87	107	110	105	103	105	95
82	81	94	94	103	107	104	72	47	18	44	71	91	103	95	91	96	81
83	69	81	87	93	100	89	71	36	10	33	63	83	87	85	81	77	69
84	63	68	77	80	81	81	58	31	5	28	53	68	68	66	71	68	63
85	53	58	67	61	60	61	50	23	3	21	45	51	51	50	59	57	53
86	44	49	52	46	45	45	38	18	1	17	34	37	36	37	45	47	44
87	35	37	40	33	33	33	28	13	0	13	24	26	26	27	35	35	35
88	24	28	31	26	24	24	20	9	0	9	18	21	20	22	28	26	24
89	18	21	24	21	19	19	15	7	0	7	13	16	16	17	21	21	18
90	15	18	20	16	14	14	11	4	0	5	10	12	10	13	18	18	15
91	14	14	17	12	9	9	8	0	0	0	7	7	8	11	16	12	14
92	0	0	13	11	7	7	1	0	0	0	0	5	6	9	6	0	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>

93	0	0	0	5	4	1	0	0	0	0	0	0	0	0	0	0	0
94	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0
95	4	11	0	0	0	0	0	1	0	0	0	0	0	0	0	13	4
96	19	15	0	0	0	0	0	0	0	0	0	0	0	0	0	16	19
97	22	16	1	0	0	0	0	0	0	0	0	0	0	0	8	17	22
98	21	17	15	0	0	0	0	0	0	0	0	0	0	0	16	18	21
99	21	17	14	0	0	3	0	0	0	0	0	14	0	0	13	18	21
100	21	17	12	0	4	24	0	0	0	0	0	27	31	0	11	17	21
101	21	17	11	0	30	25	0	0	0	0	0	31	37	0	10	18	21
102	21	17	10	0	30	26	0	0	0	0	0	30	41	1	9	18	21
103	21	18	9	1	32	26	1	0	0	0	1	30	37	4	6	17	21
104	21	17	6	3	33	30	2	0	0	0	1	30	39	8	3	17	21
105	19	17	2	5	37	26	6	0	0	0	5	26	35	10	0	17	19
106	19	17	0	9	31	23	9	0	0	0	7	23	34	10	0	16	19
107	19	14	0	9	27	22	9	0	0	0	7	20	27	11	0	12	19
108	16	9	0	10	26	20	9	0	0	0	8	21	24	13	0	8	16
109	11	6	0	12	22	21	9	0	0	0	7	20	24	13	0	3	11
110	8	1	0	11	23	19	8	0	0	0	6	17	24	12	0	0	8
111	2	0	0	11	22	15	6	0	0	0	5	14	20	11	0	0	2
112	0	0	0	10	17	14	5	0	0	0	4	13	18	10	0	0	0
113	0	0	0	9	16	13	4	0	0	0	4	12	16	9	0	0	0
114	0	0	0	8	14	11	4	0	0	0	3	10	14	8	0	0	0
115	0	0	0	7	13	8	3	0	0	0	2	8	12	7	1	0	0
116	0	0	1	6	10	7	2	0	0	0	2	7	11	6	1	0	0
117	0	0	1	5	8	6	2	0	0	0	2	6	9	6	1	0	0
118	0	0	1	5	7	6	1	0	0	0	1	5	8	5	1	0	0
119	0	0	1	5	6	5	1	0	0	0	1	5	7	4	1	0	0
120	0	0	1	4	6	4	1	0	0	0	1	4	6	4	1	0	0
121	0	0	1	3	5	3	1	0	0	0	1	3	5	3	1	0	0
122	0	0	1	3	4	3	1	0	0	0	1	3	5	3	1	0	0
123	0	1	1	3	3	2	1	1	1	1	1	2	4	3	1	0	0
124	1	0	1	2	3	2	1	0	1	1	1	2	4	2	1	0	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>

125	1	1	1	2	2	2	1	0	1	1	1	2	3	2	1	0	1
126	1	1	1	2	2	1	1	1	1	1	1	1	3	2	1	1	1
127	1	1	1	2	2	1	1	1	1	1	1	1	3	2	1	1	1
128	1	1	1	2	1	1	1	1	1	1	1	1	2	2	1	1	1
129	1	1	1	1	1	1	1	1	1	1	1	1	2	2	1	1	1
130	1	1	1	1	1	1	1	1	1	1	1	1	2	2	1	1	1
131	1	1	1	1	1	1	1	1	1	1	1	1	2	1	1	1	1
132	1	1	1	1	1	1	1	1	1	1	1	1	2	1	1	1	1
133	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
134	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
135	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
136	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
137	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
138	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
139	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
140	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
141	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
142	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
143	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
144	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
145	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
146	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
147	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
148	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2
149	2	1	1	1	1	1	1	1	1	1	2	1	1	1	1	1	2
150	2	2	1	1	1	1	1	1	1	1	2	1	1	1	1	1	2
151	2	2	1	1	1	1	1	1	1	1	2	1	1	1	1	1	2
152	2	2	1	1	1	1	1	1	1	1	2	1	1	1	1	1	2
153	2	2	1	1	1	1	1	1	1	1	2	1	1	1	1	1	2
154	2	2	1	1	1	1	1	1	1	1	3	1	1	1	1	1	2
155	2	2	1	1	1	1	1	1	1	1	3	1	1	1	1	1	2
156	2	2	1	1	1	1	1	1	1	1	3	1	1	1	1	1	2

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	2	2	1	1	1	1	1	1	1	1	3	1	1	1	1	2
158	2	2	1	1	1	1	1	2	1	1	3	1	1	1	2	2
159	2	2	1	1	1	1	1	2	1	1	2	1	1	1	2	2
160	2	2	1	1	1	1	1	2	1	1	2	1	1	1	2	2
161	2	2	1	1	1	1	1	2	1	1	2	1	1	1	2	2
162	2	2	1	1	1	1	1	2	1	1	2	2	1	1	2	2
163	2	2	2	1	1	1	1	2	1	2	2	2	1	1	2	2
164	2	2	2	1	1	1	1	2	1	2	2	2	1	1	2	2
165	2	2	2	1	2	1	1	2	2	2	2	2	1	1	2	2
166	2	2	2	1	2	1	1	2	2	2	2	2	1	1	2	2
167	2	2	2	1	2	1	2	2	2	2	2	2	1	1	2	2
168	2	2	2	1	2	1	2	2	2	2	2	2	1	1	2	2
169	2	2	2	1	2	1	2	2	2	2	2	2	1	1	2	2
170	2	2	2	1	2	1	2	2	2	2	2	2	1	1	2	2
171	2	2	2	1	2	2	2	2	2	2	2	2	1	1	2	2
172	2	2	2	2	2	2	2	2	2	2	2	2	1	1	2	2
173	2	2	2	2	2	2	2	2	2	2	2	2	1	1	2	2
174	2	2	2	2	2	2	2	2	2	2	2	2	1	1	2	2
175	2	2	2	2	2	2	2	2	2	2	2	2	2	1	2	2
176	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
177	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
178	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
179	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
180	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2

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-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 *******