



NVLAP LAB CODE 201011-0

Report No.: GZE150182-A

LM-79-08 Test Report

For

P.Q.L., Inc.

(Brand Name: Superior Life®)

2285 Ward Avenue
Simi Valley, CA 93065

Fuel Pump Canopy Luminaires

Model name(s): 90001

Representative (Tested) Model: 90001

Model Difference: N/A

Test & Report By:

Dendi Lin

Engineer: Dendi Lin

Date: Aug.31,2015

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-H/2

Address: 8th floor, Block B, No. 11 Caipin Road, Guangzhou Science City, Tianhe, 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	Aug.31,2015
Test Report No.	GZE150182-A
Laboratory Contact Name	Tommy Liang

Product Information:

Organization Name	P.Q.L., Inc.	
Brand Name	Superior Life®	
Model Number	90001	
SKU (if available)	N/A	
Type of Luminaire (for integral lamps, list base type and lamp type)	Fuel Pump Canopy Luminaires	
Luminaire Aperture (for downlights)	--	in.
Luminaire Length	--	mm
Luminaires Width	--	mm
Number of Units (modular products)	N/A	

Integrating Sphere
Goniophotometer
Electrical Measurements:
Output
Output

Input Wattage	--	61.03	W
Input Current	--	0.5124	A
Input Voltage (ac)	--	120.0	V
Power Factor	--	0.9925	
Off-State Power	--	0	W

Photometric Characteristics

Total Initial Lumen Output	--	6883.5	lm
Initial Lumen Efficacy	--	112.79	lm/w
Correlated color temperature / CCT	5164	--	K
Color rendering index / CRI	71.5	--	
R9 Value	0	--	
Duv	0.0078	--	

Luminous Intensity Distribution

Center beam candlepower (if applicable)	---	2689	cd
Beam angle (if applicable)		105.6	°
Zonal lumens in the 0°-60° zone		86.8	%
Zonal lumens in the 60°-90° zone		13	%
Zonal lumens in the 90°-120° zone		0	%
Zonal lumens in the 120°-180° zone		0.2	%

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

Report Format Number STD/QR4909-H/2

Address: 8th floor, Block B, No. 11 Caipin Road, Guangzhou Science City, Tianhe, Guangzhou 510663, China

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

Date of Receipt	: Aug.25,2015
Date of Test	: Aug.30,2015
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 $25\text{ }^{\circ}\text{C} \pm 1\text{ }^{\circ}\text{C}$, 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 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. 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 $25\text{ }^{\circ}\text{C} \pm 1\text{ }^{\circ}\text{C}$. 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.

Laboratory: Standard-Tech Co. Ltd Testing Center

NVLAP CODE: 201011-0

Report Format Number STD/QR4909-H/2

Address: 8th floor, Block B, No. 11 Caipin Road, Guangzhou Science City, Tianhe, Guangzhou 510663, China

Tel: 8620-3229 0320

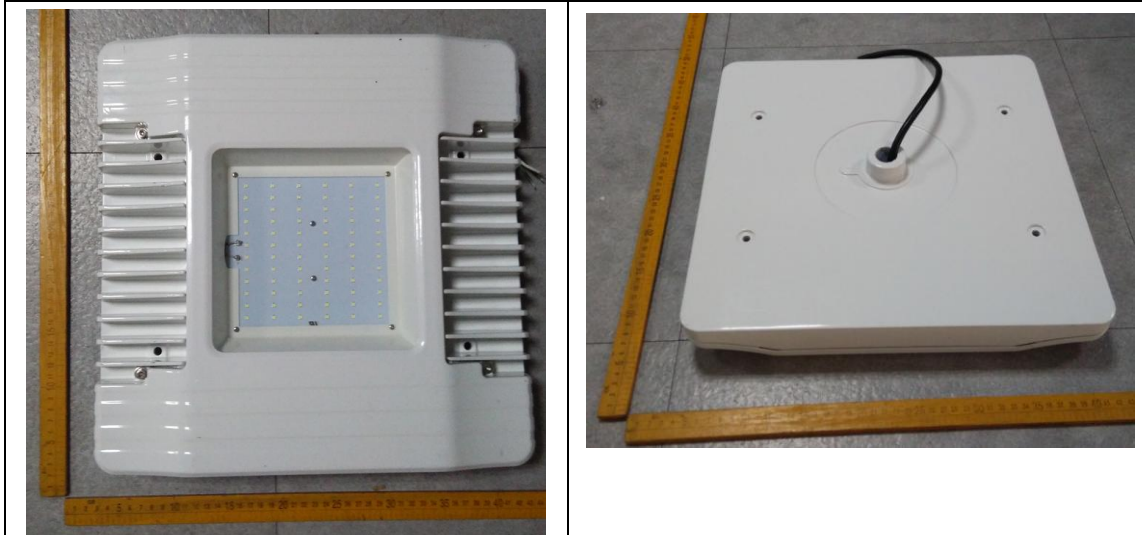
Fax: 8620-32290422

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

1. Product Information:

Brand Name	Superior Life®
Model Number	90001
Luminaire Type	Fuel Pump Canopy Luminaires
Rated Voltage / Frequency	100 ~ 277 Vac, 50/60Hz
Nominal Power	60W
Rated Initial Lamp Lumen	--
Declared CCT	5000K
LED Manufacturer	Nichia Corporation
LED Model	NF2L757DR
Sample Receipt Date	Aug.25,2015
Sample Number	GZE150182-A1(5000K)

Photo



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

IES LM-79 2008

Test date	2015-08-30	Test Ambient:	25.2 °C
Test Orientation	As intended	Stabilization Time (min)	90
Model Number	90001		

Electrical Measurement:

Sample No.	Voltage (Vac)	Frequency (Hz)	Current (A)	Power (W)	Power Factor	THD %
GZE150182	120.0	60	0.5124	61.03	0.9925	11.15
-A1	277.1	60	0.2395	60.00	0.9040	14.96

Color Data:

Parameter	Result
Test Voltage (V)	120.0
Frequency (Hz)	60
Color Rendering Index (CRI)	71.5
R9	0
CCT (K)	5164
Chromaticity (x, y)	x=0.3417 y=0.3648
Chromaticity (u', v')	u'=0.2042 v'=0.4904
Duv	0.0078

Special Color Rendering Indices			
R1	68	R9	0
R2	76	R10	43
R3	82	R11	66
R4	71	R12	38
R5	68	R13	69
R6	67	R14	90
R7	83	R15	62
R8	57	--	--

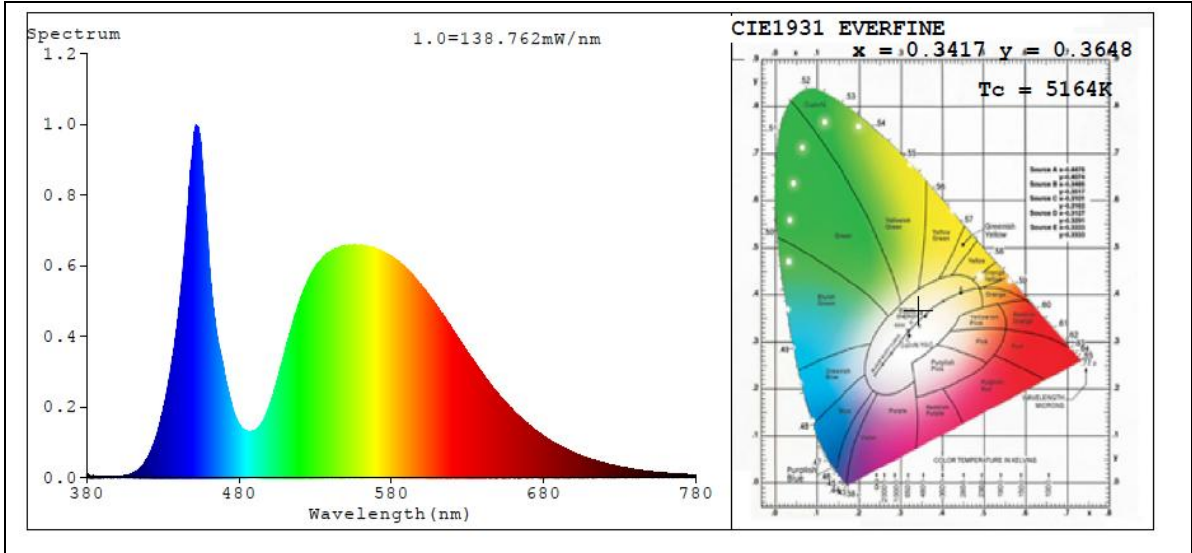
Goniophotometer Method :

Parameter	Result
Test Voltage (V)	120.0
Frequency (Hz)	60
Total Luminous (lm)	6883.5
Luminous Efficacy (lm/W)	112.79
Beam Angle °	105.6
Center Beam Candle Power (cd)	2689

Goniophotometer Method for 277V:

Parameter	Result
Test Voltage (V)	277.0
Frequency (Hz)	60
Total Luminous (lm)	6826.8
Luminous Efficacy (lm/W)	113.78

Spectral Power Distribution & Chromaticity Diagram



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

Report Format Number STD/QR4909-H/2

Address: 8th floor, Block B, No. 11 Caipin Road, Guangzhou Science City, Tianhe, Guangzhou 510663, China

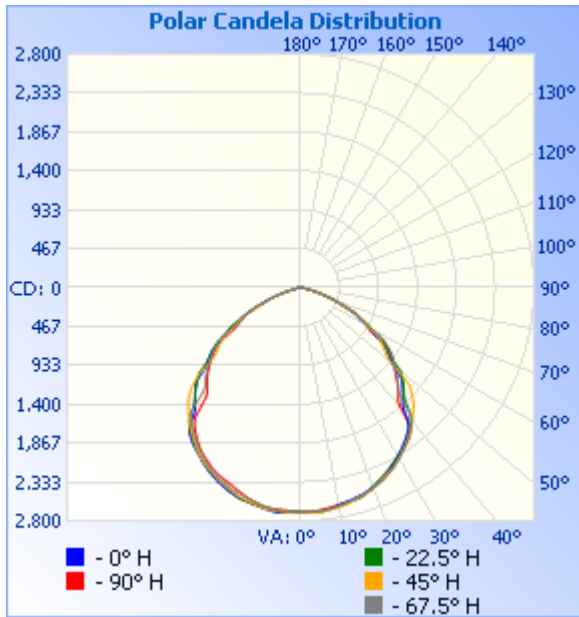
Tel: 8620-3229 0320 Fax: 8620-32290422 <http://www.standard-tech.com>

Zonal Lumen Tabulation

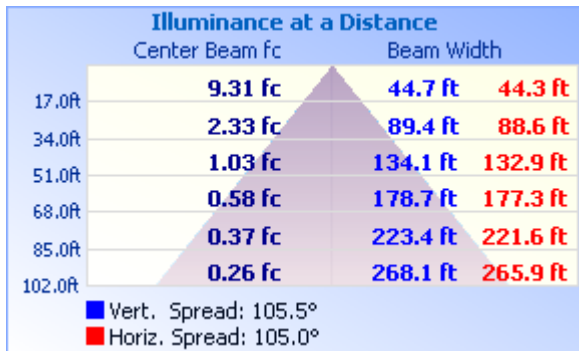
Zonal Lumen Summary		
Zone	Lumens	% Luminaire
0-30	2,130.5	31%
0-40	3,520.1	51.1%
0-60	5,973.3	86.8%
60-90	897.7	13%
70-100	237.4	3.4%
90-120	1.2	0%
0-90	6,871.0	99.8%
90-180	11.7	0.2%
0-180	6,882.7	100%

Lumens Per Zone					
Zone	Lumens	% Total	Zone	Lumens	% Total
0-10	256.1	3.7%	90-100	0.0	0%
10-20	739.0	10.7%	100-110	0.2	0%
20-30	1,135.4	16.5%	110-120	1.0	0%
30-40	1,389.6	20.2%	120-130	1.9	0%
40-50	1,354.2	19.7%	130-140	2.4	0%
50-60	1,099.0	16.0%	140-150	2.3	0%
60-70	660.3	9.6%	150-160	2.0	0%
70-80	208.3	3.0%	160-170	1.3	0%
80-90	29.0	0.4%	170-180	0.5	0%

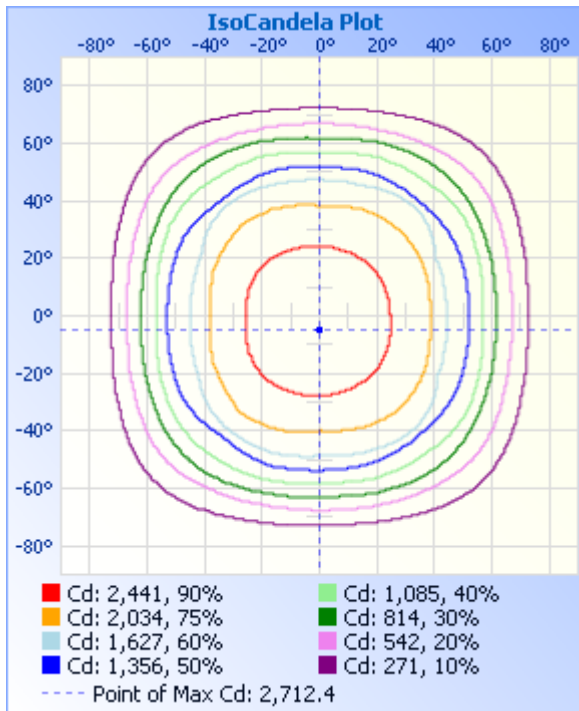
Photometric Data



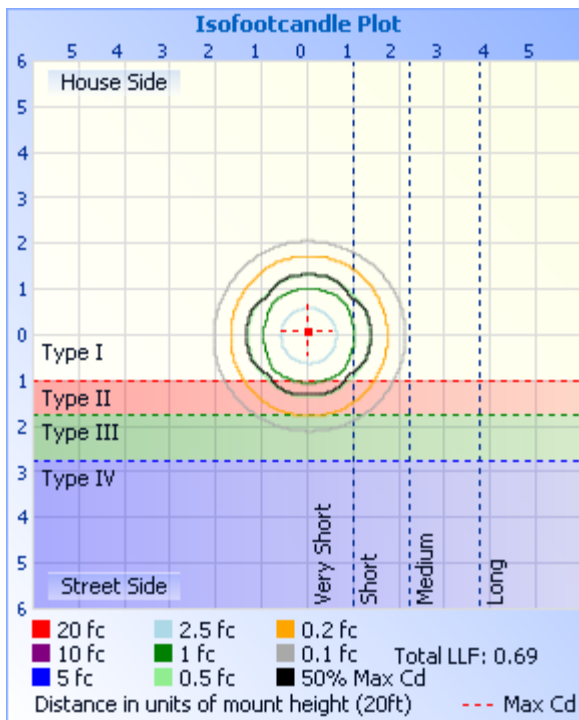
Illuminance Plots



ISOCANDELA DIAGRAM



ISOLUX DIAGRAM



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

Report Format Number STD/QR4909-H/2

Address: 8th floor, Block B, No. 11 Caipin Road, Guangzhou Science City, Tianhe, Guangzhou 510663, China

Tel: 8620-3229 0320

Fax: 8620-32290422

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

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	2689	2689	2689	2689	2689	2689	2689	2689	2689	2689	2689	2689	2689	2689	2689	2689	2689
1	2694	2692	2689	2684	2691	2690	2694	2693	2690	2691	2696	2694	2688	2692	2689	2687	2694
2	2697	2698	2695	2687	2689	2694	2701	2698	2698	2693	2700	2692	2685	2690	2690	2689	2697
3	2699	2702	2702	2690	2687	2699	2707	2703	2705	2693	2700	2689	2679	2684	2689	2694	2699
4	2698	2705	2706	2690	2684	2704	2708	2704	2710	2696	2700	2690	2676	2680	2683	2692	2698
5	2694	2702	2705	2688	2678	2707	2705	2700	2712	2700	2696	2690	2675	2680	2682	2686	2694
6	2690	2695	2699	2686	2671	2704	2702	2697	2711	2698	2691	2685	2673	2681	2685	2677	2690
7	2684	2685	2691	2681	2664	2696	2703	2697	2706	2690	2689	2679	2671	2676	2683	2672	2684
8	2676	2680	2685	2676	2657	2687	2700	2695	2698	2682	2689	2669	2669	2665	2671	2667	2676
9	2664	2673	2677	2669	2650	2681	2693	2689	2689	2675	2685	2660	2668	2654	2660	2661	2664
10	2648	2661	2673	2657	2642	2676	2683	2682	2679	2669	2676	2651	2662	2646	2651	2655	2648
11	2635	2646	2669	2648	2637	2670	2673	2671	2669	2667	2666	2638	2648	2639	2642	2643	2635
12	2628	2636	2661	2640	2635	2665	2666	2661	2661	2661	2652	2627	2632	2630	2630	2632	2628
13	2619	2629	2647	2631	2634	2659	2663	2654	2653	2654	2644	2618	2617	2615	2622	2622	2619
14	2610	2629	2633	2620	2629	2650	2656	2648	2644	2649	2638	2607	2602	2601	2611	2611	2610
15	2601	2625	2618	2610	2623	2637	2649	2641	2640	2640	2627	2596	2583	2589	2599	2599	2601
16	2592	2616	2603	2600	2614	2625	2637	2631	2638	2628	2617	2584	2565	2579	2587	2588	2592
17	2585	2601	2591	2589	2603	2615	2624	2619	2625	2614	2605	2573	2549	2566	2571	2572	2585
18	2569	2583	2581	2580	2589	2605	2613	2607	2609	2598	2586	2563	2531	2550	2555	2555	2569
19	2553	2564	2570	2570	2571	2592	2602	2593	2597	2579	2570	2548	2513	2534	2540	2539	2553
20	2540	2539	2556	2556	2554	2575	2590	2579	2582	2559	2554	2534	2499	2519	2524	2521	2540
21	2524	2517	2540	2541	2540	2560	2573	2567	2565	2540	2540	2518	2486	2505	2510	2501	2524
22	2503	2500	2521	2528	2524	2550	2557	2554	2549	2526	2527	2503	2473	2490	2497	2481	2503
23	2480	2481	2501	2513	2509	2536	2538	2534	2533	2514	2510	2489	2460	2472	2479	2462	2480
24	2461	2468	2477	2495	2492	2515	2516	2512	2514	2496	2488	2470	2447	2451	2454	2447	2461
25	2439	2450	2461	2474	2473	2493	2495	2494	2495	2476	2470	2452	2431	2428	2429	2431	2439
26	2417	2429	2450	2457	2449	2471	2481	2481	2473	2459	2453	2432	2413	2409	2405	2409	2417
27	2395	2409	2436	2437	2420	2452	2470	2462	2451	2441	2433	2409	2389	2392	2381	2382	2395
28	2373	2384	2415	2412	2389	2434	2452	2439	2431	2417	2415	2389	2366	2372	2358	2356	2373
29	2353	2362	2389	2389	2362	2409	2428	2417	2408	2395	2391	2368	2345	2349	2340	2335	2353

Laboratory: Standard-Tech Co. Ltd Testing Center

NVLAP CODE: 201011-0

Report Format Number STD/QR4909-H/2

Address: 8th floor, Block B, No. 11 Caipin Road, Guangzhou Science City, Tianhe, Guangzhou 510663, China

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

30	2329	2340	2363	2368	2339	2385	2403	2395	2381	2373	2369	2340	2324	2324	2321	2317	2329
31	2304	2319	2338	2340	2317	2362	2379	2371	2357	2348	2347	2313	2301	2299	2298	2294	2304
32	2279	2296	2313	2311	2301	2339	2356	2348	2336	2323	2321	2288	2274	2272	2272	2270	2279
33	2255	2272	2291	2285	2283	2316	2332	2320	2313	2300	2294	2262	2245	2247	2244	2244	2255
34	2229	2249	2266	2261	2263	2292	2307	2296	2289	2275	2263	2233	2214	2219	2216	2217	2229
35	2201	2221	2237	2235	2242	2265	2278	2272	2264	2246	2233	2206	2180	2186	2186	2189	2201
36	2172	2192	2209	2205	2219	2237	2250	2241	2237	2215	2201	2175	2145	2153	2159	2161	2172
37	2140	2160	2180	2175	2186	2209	2221	2212	2205	2184	2172	2144	2110	2123	2128	2128	2140
38	2106	2128	2146	2146	2145	2180	2193	2184	2171	2153	2146	2113	2076	2092	2099	2093	2106
39	2041	2095	2111	2116	2011	2145	2164	2155	2101	2122	2114	2082	2012	2059	2065	2064	2041
40	1934	2061	2078	2084	1845	2100	2129	2123	1990	2088	2079	2048	1849	2025	2031	2031	1934
41	1868	2014	2047	2001	1783	1962	2093	2082	1927	2019	2045	2011	1720	1976	1998	1988	1868
42	1834	1909	2016	1834	1754	1796	2057	1990	1898	1915	2011	1887	1678	1830	1962	1884	1834
43	1802	1829	1982	1722	1719	1733	2021	1891	1862	1855	1975	1722	1647	1686	1928	1798	1802
44	1769	1785	1947	1688	1680	1706	1984	1844	1827	1820	1938	1646	1616	1630	1892	1759	1769
45	1735	1751	1908	1655	1644	1674	1944	1809	1791	1785	1904	1614	1584	1598	1854	1724	1735
46	1702	1717	1860	1620	1607	1641	1893	1770	1758	1747	1858	1583	1556	1563	1815	1687	1702
47	1669	1682	1808	1586	1566	1609	1845	1736	1723	1709	1800	1551	1526	1526	1765	1652	1669
48	1633	1644	1764	1552	1531	1575	1755	1698	1682	1670	1741	1516	1492	1494	1720	1616	1633
49	1538	1605	1653	1516	1501	1540	1605	1659	1577	1633	1648	1480	1457	1462	1628	1580	1538
50	1444	1570	1467	1480	1473	1506	1473	1617	1490	1587	1513	1443	1423	1428	1440	1543	1444
51	1398	1498	1341	1446	1440	1468	1383	1555	1451	1483	1368	1406	1384	1393	1310	1477	1398
52	1361	1391	1302	1411	1407	1435	1332	1440	1412	1398	1294	1369	1344	1356	1266	1367	1361
53	1321	1346	1270	1377	1376	1396	1296	1385	1371	1357	1259	1329	1306	1316	1225	1314	1321
54	1285	1306	1236	1342	1336	1354	1259	1346	1331	1315	1221	1286	1265	1277	1189	1276	1285
55	1249	1266	1201	1305	1296	1312	1222	1306	1286	1277	1184	1245	1224	1239	1155	1238	1249
56	1165	1224	1165	1261	1252	1272	1187	1261	1177	1236	1143	1203	1184	1200	1117	1201	1165
57	1079	1184	1125	1217	1143	1227	1148	1213	1108	1183	1100	1160	1056	1157	1080	1158	1079
58	1038	1107	1078	1173	990	1177	1110	1133	1069	1073	1017	1112	938	1114	1040	1085	1038
59	998	1019	993	1098	954	1038	1053	1041	1028	1014	957	1016	901	998	957	992	998
60	959	977	941	930	918	926	966	995	986	977	919	871	859	873	894	953	959
61	893	934	902	882	882	891	919	954	890	935	879	832	822	831	856	911	893

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

Report Format Number STD/QR4909-H/2

Address: 8th floor, Block B, No. 11 Caipin Road, Guangzhou Science City, Tianhe, Guangzhou 510663, China

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

62	814	890	866	843	844	850	878	896	825	882	837	793	787	795	821	870	814
63	772	816	825	801	802	813	836	829	787	779	793	758	750	754	782	789	772
64	733	746	777	764	769	774	784	718	747	735	708	707	714	722	734	728	733
65	669	701	701	716	731	738	683	634	658	692	657	648	673	684	653	667	669
66	603	636	613	657	683	693	565	596	608	627	563	608	563	619	538	585	603
67	566	531	533	620	537	630	531	524	572	522	505	568	496	568	500	507	566
68	510	481	501	565	505	512	499	482	491	466	453	456	464	451	470	468	510
69	448	450	448	453	473	447	463	448	449	414	410	416	431	412	415	437	448
70	415	387	407	421	439	417	407	382	396	368	381	385	398	383	381	374	415
71	345	352	378	386	406	387	375	353	342	335	338	342	334	353	351	343	345
72	317	309	336	346	313	354	333	295	290	284	295	303	269	314	301	294	317
73	255	269	292	305	266	284	249	263	249	244	237	229	242	233	241	262	255
74	213	224	233	226	241	223	225	215	196	208	198	207	219	207	212	216	213
75	181	193	197	205	213	202	190	180	155	165	176	177	151	186	184	181	181
76	141	157	173	177	147	172	164	140	121	130	147	130	133	133	156	148	141
77	108	122	144	127	131	125	122	111	89	97	110	113	90	114	122	115	108
78	80	95	109	111	84	108	103	86	73	75	92	81	78	83	101	90	80
79	72	74	91	78	75	75	85	69	66	67	73	72	70	73	79	72	72
80	64	66	72	68	67	67	68	61	58	58	60	63	61	64	65	64	64
81	55	58	60	59	59	59	56	53	50	50	51	54	52	55	54	55	55
82	47	49	50	51	50	50	47	45	42	42	43	45	43	46	46	47	47
83	39	41	42	43	42	42	40	37	34	35	36	37	36	38	38	39	39
84	32	34	35	35	34	34	33	30	27	28	29	30	29	31	31	32	32
85	25	28	29	29	28	28	27	24	21	22	24	25	23	25	25	26	25
86	19	21	23	23	23	23	21	17	16	15	18	20	19	20	20	18	19
87	13	14	17	19	19	19	14	10	7	8	10	15	15	15	13	13	13
88	1	3	8	13	13	11	4	0	0	0	1	6	3	6	4	1	1
89	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
90	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
91	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
92	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
93	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

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

Report Format Number STD/QR4909-H/2

Address: 8th floor, Block B, No. 11 Caipin Road, Guangzhou Science City, Tianhe, Guangzhou 510663, China

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

94	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
95	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
96	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
97	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
98	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
99	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
101	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
102	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
103	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
104	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
105	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
106	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0
107	0	0	0	0	1	0	1	0	0	0	0	1	0	0	0	0	0
108	0	0	0	0	1	1	1	1	1	0	1	1	0	0	0	0	0
109	0	0	0	0	1	1	1	1	1	1	1	1	0	0	0	0	0
110	0	0	0	0	1	1	1	1	1	1	1	1	0	0	0	0	0
111	0	0	0	1	1	1	1	1	1	1	1	1	1	1	0	0	0
112	0	0	0	1	1	1	1	1	1	1	1	1	1	1	0	0	0
113	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	0	0
114	1	0	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
115	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	1
116	1	0	1	1	1	1	1	1	1	1	1	2	1	1	1	0	1
117	1	0	1	1	1	1	1	1	1	1	1	2	1	1	1	0	1
118	1	0	1	1	2	2	2	1	2	1	1	2	1	1	1	0	1
119	1	1	1	1	2	2	2	1	2	1	2	2	1	1	1	1	1
120	1	1	1	1	2	2	2	2	2	1	2	2	1	1	2	1	1
121	1	1	2	2	2	2	2	2	2	2	2	2	1	1	2	2	1
122	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
123	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
124	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
125	2	2	2	2	2	2	2	2	3	2	2	2	2	2	2	2	2

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

Report Format Number STD/QR4909-H/2

Address: 8th floor, Block B, No. 11 Caipin Road, Guangzhou Science City, Tianhe, Guangzhou 510663, China

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

126	3	2	2	2	2	2	2	3	3	2	2	2	2	2	2	3
127	3	2	2	2	2	2	2	3	3	2	2	2	2	2	2	3
128	3	3	2	2	2	3	2	3	3	3	2	2	2	2	3	3
129	3	3	2	2	3	3	2	3	3	3	2	3	3	3	2	3
130	3	3	2	2	3	3	2	3	3	3	2	3	3	3	2	3
131	3	3	2	3	3	3	3	3	3	3	3	3	3	3	2	3
132	3	3	2	2	3	3	3	4	4	3	3	3	3	3	2	3
133	3	3	2	3	3	3	3	4	4	3	3	3	3	3	2	3
134	3	3	2	3	3	3	3	4	4	4	3	3	3	3	2	3
135	3	3	3	3	3	3	3	4	4	4	3	3	3	3	2	3
136	3	3	3	3	3	3	3	4	4	4	3	3	3	3	2	3
137	3	3	3	3	4	3	3	4	4	4	3	3	3	3	2	3
138	3	3	3	3	4	3	3	4	4	4	3	4	3	3	2	3
139	3	3	3	3	4	4	3	4	4	4	3	4	3	3	2	3
140	3	3	3	3	4	4	3	4	4	4	3	4	3	3	3	3
141	3	3	3	3	4	4	3	4	4	4	3	4	3	3	3	4
142	3	4	3	3	4	4	3	4	4	4	3	4	3	3	3	4
143	3	4	3	3	4	4	3	4	4	4	3	4	3	3	3	4
144	3	4	3	3	4	4	4	4	4	4	4	4	3	3	3	4
145	4	4	3	3	4	4	4	4	4	4	4	4	3	3	3	4
146	4	4	3	3	4	4	4	4	4	4	4	4	3	3	3	4
147	4	4	3	3	4	4	4	4	4	5	4	4	4	3	3	4
148	4	4	3	3	5	4	4	4	4	4	4	4	3	3	4	4
149	4	4	3	3	5	4	4	4	4	4	4	5	4	3	3	4
150	5	4	4	3	5	4	4	4	4	4	4	5	4	4	3	4
151	5	4	4	3	5	4	4	4	4	4	4	5	4	4	3	4
152	5	4	4	3	5	5	5	4	4	4	4	5	4	4	3	4
153	5	4	4	4	5	5	5	4	4	4	4	5	5	4	3	4
154	5	4	4	4	5	5	5	5	4	4	4	5	5	4	3	4
155	5	4	4	4	5	5	5	5	5	4	4	5	5	4	3	4
156	5	4	4	4	5	5	5	5	5	5	5	5	5	4	3	4
157	5	4	4	4	5	5	5	5	5	5	5	5	5	4	3	4

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

Report Format Number STD/QR4909-H/2

Address: 8th floor, Block B, No. 11 Caipin Road, Guangzhou Science City, Tianhe, Guangzhou 510663, China

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

158	5	4	4	4	5	5	5	5	5	5	5	5	4	3	4	5	5
159	5	4	4	4	5	5	5	5	5	5	5	5	4	4	4	5	5
160	5	4	4	4	5	5	5	5	5	5	5	5	4	4	4	5	5
161	5	4	4	4	5	5	5	5	5	5	5	5	4	4	4	5	5
162	5	4	4	4	5	5	5	5	5	5	5	5	4	4	4	5	5
163	5	5	4	4	5	5	5	5	5	5	5	5	4	4	4	5	5
164	5	5	4	4	5	5	5	5	5	5	5	5	4	4	4	5	5
165	5	5	4	4	5	5	5	5	5	5	5	5	4	4	5	5	5
166	5	5	4	4	5	5	5	5	5	5	5	5	4	4	4	5	5
167	5	5	4	4	5	5	5	5	5	5	5	6	4	4	5	5	5
168	5	5	5	4	5	5	5	5	5	5	5	6	5	4	5	5	5
169	5	5	5	4	5	5	5	6	6	6	6	6	5	4	5	5	5
170	5	5	5	4	6	5	5	6	6	6	6	6	5	4	5	5	5
171	6	5	5	4	6	6	5	6	6	6	6	6	5	4	5	6	6
172	6	6	5	4	6	6	5	6	6	7	6	6	5	4	5	6	6
173	6	6	5	4	6	6	5	6	6	7	6	6	5	4	5	6	6
174	6	6	5	5	6	6	5	6	6	7	6	6	5	5	5	6	6
175	6	6	6	5	6	6	5	6	6	7	6	6	5	5	6	6	6
176	6	6	6	5	6	6	5	6	6	7	6	6	5	5	6	6	6
177	6	6	6	5	6	6	5	6	6	6	6	6	5	5	6	6	6
178	6	6	6	5	6	6	5	6	6	6	6	6	5	5	6	6	6
179	6	6	6	5	6	6	5	6	6	6	6	6	5	5	6	6	6
180	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6

Laboratory: Standard-Tech Co. Ltd Testing Center

NVLAP CODE: 201011-0

Report Format Number STD/QR4909-H/2

Address: 8th floor, Block B, No. 11 Caipin Road, Guangzhou Science City, Tianhe, 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 *******