



Report No.: GZE150818-B2

NVLAP LAB CODE 201011-0

## LM-79-08 Test Report

For

**Premium Quality Lighting, Inc.**

**(Brand Name: Superior Life®)**

2285 Ward Avenue  
Simi Valley, CA 93065

### **Retrofit Kits for Outdoor Pole/Arm-mounted Area and Roadway Luminaires**

Model name(s): 83491

Representative (Tested) Model: 83491

Model Different: N/A

Test & Report By:

*Peeta Cao*

Engineer: Peeta Cao

Date: Sep.09,2015

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-A/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	Sep.09,2015
Test Report No.	GZE150818-B2
Laboratory Contact Name	Tommy Liang

**Product Information:**

Organization Name	Premium Quality Lighting	
Brand Name	Superior Life®	
Model Number	83491	
SKU (if available)	N/A	
Type of Luminaire (for integral lamps, list base type and lamp type)	Retrofit Kits for Outdoor Pole/Arm-mounted Area and Roadway Luminaires	
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	--	47.35	W
Input Current	--	0.1399	A
Input Voltage (ac)	--	347.0	V
Power Factor	--	0.9756	
Off-State Power	--	0	W

**Photometric Characteristics**

Total Initial Lumen Output	--	6004.0	lm
Initial Lumen Efficacy	--	126.80	lm/w
Correlated color temperature / CCT	4965	--	K
Color rendering index / CRI	74.8	--	
R9 Value	0	--	
Duv	0.0041	--	
<b>Luminous Intensity Distribution</b>			
Center beam candlepower (if applicable)		2117	cd
Beam angle (if applicable)		114.4	°
Zonal lumens in the 0°-60° zone		81.5	%
Zonal lumens in the 60°-90° zone	-----	18.4	%
Zonal lumens in the 90°-120° zone		0	%
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: 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>

Test Specifications:	
Date of Receipt	: Aug.08,2015
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 347 Volts AC, 60Hz. It was stabilized before measurement was made. Luminous flux, luminaire efficacy, zonal lumen were calculated from the software taken at  $1\text{ }^{\circ}$  vertical intervals and  $22.5\text{ }^{\circ}$  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  $25\text{ }^{\circ}\text{C} \pm 1\text{ }^{\circ}\text{C}$ . 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 347 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-A/2

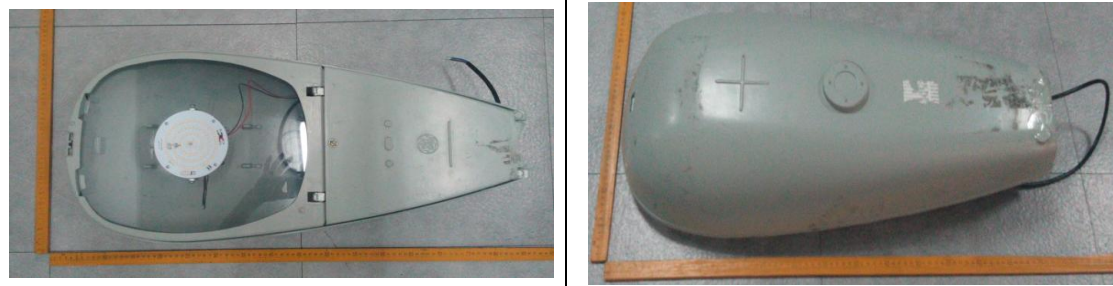
Address: 8th floor, Block B, No. 11 Caipin Road, Guangzhou Science City, Tianhe, Guangzhou 510663, China

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

**1. Product Information:**

Brand Name	Superior Life®
Model Number	83491
Luminaire Type	Retrofit Kits for Outdoor Pole/Arm-mounted Area and Roadway Luminaires
Rated Voltage / Frequency	347~ 480V, 50/60 Hz
Nominal Power	45W
Rated Initial Lamp Lumen	--
Declared CCT	5000K
LED Manufacturer	Nichia Corporation
LED Model	NF2L757DR (Nominal CCT: 2700 K)
Sample Receipt Date	Aug.08,2015
Sample Number	GZE150818-B21(5000K)

**Photo**



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

<b>Test date</b>	2015-08-30	<b>Test Ambient:</b>	25.2 °C
<b>Test Orientation</b>	As intended	<b>Stabilization Time (min)</b>	90
<b>Model Number</b>	83491		

**Electrical Measurement:**

Sample No.	Voltage (Vac)	Frequency (Hz)	Current (A)	Power (W)	Power Factor	THD %
GZE150818	347.0	60	0.1399	47.35	0.9756	6.62
-B21	480.0	60	0.1068	47.22	0.9215	8.34

**Sphere-Spectroradiometer Method in GE M250R2 Roadway Lamp:**

Parameter	Result	Special Color Rendering Indices			
Test Voltage (V)	347.0	R1	72	R9	0
Frequency (Hz)	60	R2	80	R10	51
Color Rendering Index (CRI)	74.8	R3	85	R11	69
R9	0	R4	74	R12	38
CCT (K)	4965	R5	71	R13	74
Chromaticity (x, y)	x=0.3469 y=0.3614	R6	71	R14	91
Chromaticity (u', v')	u'=0.2089 v'=0.4896	R7	85	R15	67
Duv	0.0041	R8	60	--	--

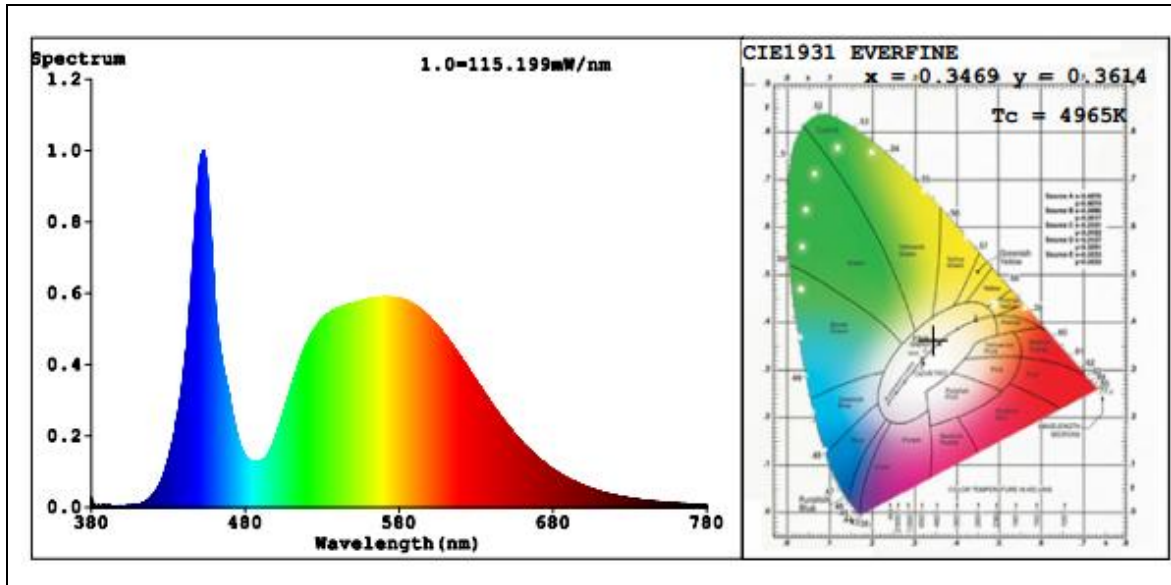
**Goniophotometer Method in GE M250R2 Roadway Lamp:**

Parameter	Result
Test Voltage (V)	347.0
Frequency (Hz)	60
Total Luminous (lm)	6004.0
Luminous Efficacy (lm/W)	126.80
Beam Angle °	114.4
Center Beam Candle Power (cd)	2117

**Goniophotometer Method in GE M250R2 Roadway Lamp:**

Parameter	Result
Test Voltage (V)	480.0
Frequency (Hz)	60
Total Luminous (lm)	6028.3
Luminous Efficacy (lm/W)	127.66

**Spectral Power Distribution & Chromaticity Diagram**



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

Report Format Number STD/QR4909-A/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	1,663.9	27.7%
0-40	2,743.5	45.7%
0-60	4,890.6	81.5%
60-90	1,104.0	18.4%
70-100	379.1	6.3%
90-120	2.0	0%
0-90	5,994.6	99.9%
90-180	8.7	0.1%
0-180	6,003.3	100%

Lumens Per Zone					
Zone	Lumens	% Total	Zone	Lumens	% Total
0-10	200.4	3.3%	90-100	0.3	0%
10-20	578.3	9.6%	100-110	1.0	0%
20-30	885.3	14.7%	110-120	0.7	0%
30-40	1,079.6	18.0%	120-130	1.2	0%
40-50	1,131.5	18.8%	130-140	1.5	0%
50-60	1,015.6	16.9%	140-150	1.5	0%
60-70	725.2	12.1%	150-160	1.3	0%
70-80	333.4	5.6%	160-170	0.9	0%
80-90	45.4	0.8%	170-180	0.4	0%

Laboratory: Standard-Tech Co. Ltd Testing Center

NVLAP CODE: 201011-0

Report Format Number STD/QR4909-A/2

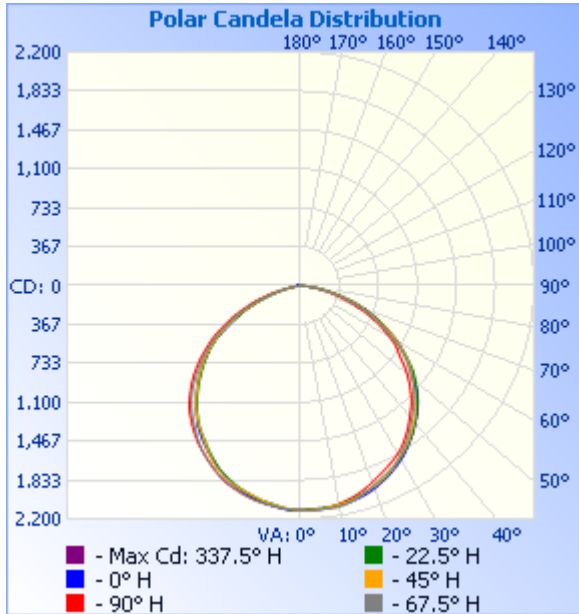
Address: 8th floor, Block B, No. 11 Caipin Road, Guangzhou Science City, Tianhe, Guangzhou 510663, China

Tel: 8620-3229 0320

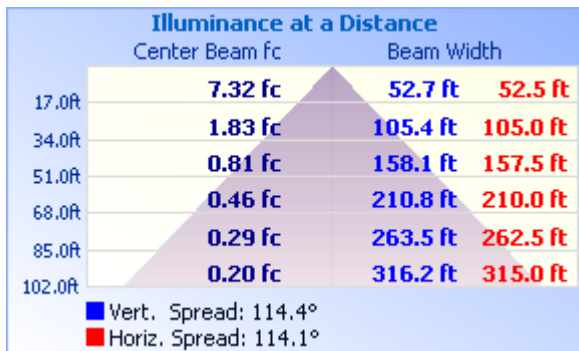
Fax: 8620-32290422

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

### Photometric Data

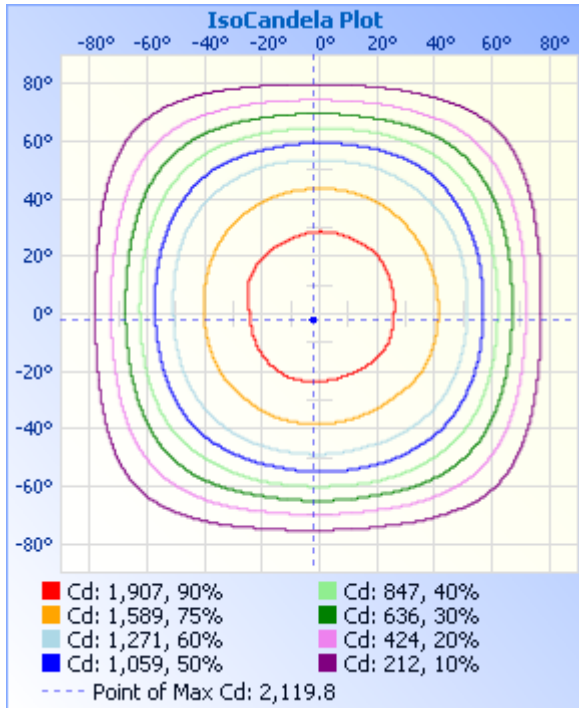


### Illuminance Plots

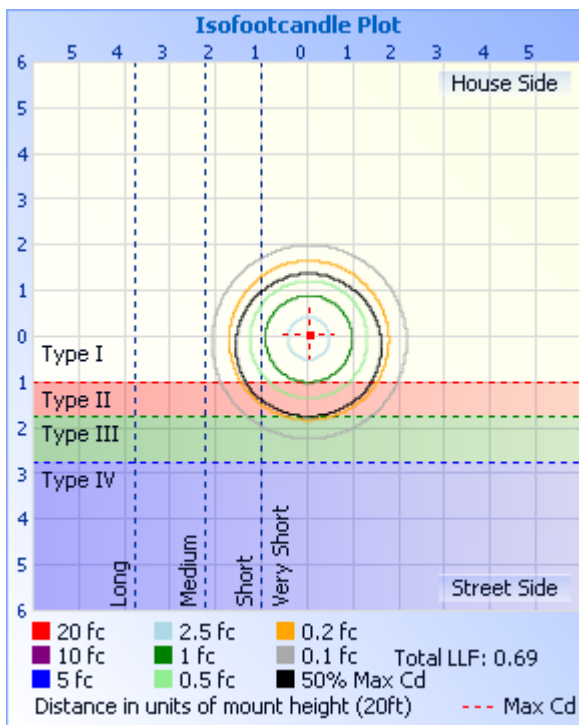




### ISOCANDELA DIAGRAM



### ISOLUX DIAGRAM



Laboratory: Standard-Tech Co. Ltd Testing Center

NVLAP CODE: 201011-0

Report Format Number STD/QR4909-A/2

Address: 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>

**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	2117	2117	2117	2117	2117	2117	2117	2117	2117	2117	2117	2117	2117	2117	2117	2117	2117
1	2116	2115	2118	2118	2118	2117	2118	2115	2118	2118	2114	2114	2116	2115	2113	2118	2116
2	2115	2112	2119	2119	2118	2117	2119	2112	2118	2117	2111	2113	2114	2114	2110	2118	2115
3	2114	2109	2117	2120	2116	2116	2119	2108	2116	2113	2106	2110	2110	2111	2109	2119	2114
4	2115	2106	2115	2120	2114	2115	2118	2103	2113	2105	2100	2107	2106	2107	2106	2120	2115
5	2115	2106	2112	2118	2111	2112	2114	2097	2106	2095	2094	2102	2101	2102	2104	2119	2115
6	2115	2106	2111	2117	2108	2108	2110	2091	2099	2086	2088	2098	2097	2097	2101	2116	2115
7	2113	2105	2107	2117	2104	2104	2104	2085	2093	2077	2082	2093	2091	2094	2097	2111	2113
8	2108	2104	2104	2118	2100	2100	2096	2080	2086	2070	2074	2088	2085	2091	2093	2106	2108
9	2104	2101	2099	2117	2095	2097	2088	2077	2079	2064	2066	2085	2080	2088	2091	2102	2104
10	2101	2098	2096	2114	2088	2093	2082	2074	2072	2057	2056	2080	2075	2086	2090	2098	2101
11	2097	2093	2092	2109	2080	2089	2076	2069	2063	2049	2045	2074	2070	2083	2089	2093	2097
12	2093	2085	2087	2103	2070	2081	2069	2065	2055	2039	2035	2066	2065	2078	2086	2091	2093
13	2089	2077	2082	2094	2061	2069	2060	2059	2046	2029	2026	2059	2059	2074	2082	2089	2089
14	2084	2069	2076	2084	2051	2054	2048	2052	2036	2018	2019	2050	2051	2069	2078	2086	2084
15	2079	2060	2068	2073	2040	2039	2036	2042	2025	2008	2010	2042	2042	2063	2072	2080	2079
16	2073	2052	2058	2061	2028	2023	2023	2031	2013	1998	2002	2033	2034	2056	2066	2073	2073
17	2064	2044	2047	2047	2015	2009	2009	2019	2002	1987	1993	2022	2024	2047	2057	2064	2064
18	2055	2034	2036	2033	2002	1996	1995	2005	1991	1974	1984	2011	2013	2036	2047	2053	2055
19	2046	2025	2024	2020	1988	1983	1979	1990	1978	1960	1974	2000	2004	2023	2037	2043	2046
20	2036	2016	2014	2006	1972	1971	1965	1973	1963	1946	1963	1990	1994	2011	2025	2031	2036
21	2023	2007	2004	1992	1957	1958	1951	1958	1945	1931	1950	1978	1982	1997	2012	2019	2023
22	2010	1997	1993	1977	1943	1943	1939	1942	1928	1918	1935	1964	1966	1982	1998	2005	2010
23	1997	1986	1982	1965	1929	1928	1926	1925	1910	1903	1919	1947	1950	1968	1984	1992	1997
24	1985	1974	1969	1953	1915	1914	1912	1908	1892	1884	1901	1930	1934	1952	1971	1980	1985
25	1971	1960	1955	1940	1901	1898	1897	1891	1872	1865	1883	1912	1917	1937	1956	1967	1971
26	1956	1944	1940	1929	1888	1885	1882	1873	1853	1844	1863	1896	1899	1920	1941	1951	1956
27	1942	1928	1925	1915	1873	1871	1867	1854	1835	1822	1840	1880	1879	1903	1925	1936	1942
28	1926	1912	1908	1900	1860	1856	1849	1833	1814	1800	1816	1863	1861	1885	1911	1919	1926
29	1909	1897	1890	1882	1846	1838	1829	1810	1794	1778	1792	1846	1843	1868	1896	1902	1909

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

Report Format Number STD/QR4909-A/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	1892	1880	1872	1862	1830	1819	1810	1786	1773	1755	1768	1827	1824	1853	1880	1884	1892
31	1875	1862	1855	1842	1812	1799	1788	1762	1752	1733	1744	1806	1806	1836	1861	1865	1875
32	1856	1844	1838	1822	1793	1776	1762	1738	1732	1711	1719	1783	1788	1818	1842	1843	1856
33	1835	1827	1820	1801	1773	1755	1734	1715	1709	1690	1694	1761	1771	1800	1820	1824	1835
34	1814	1809	1799	1780	1752	1733	1707	1692	1688	1669	1671	1738	1749	1781	1797	1804	1814
35	1794	1790	1778	1758	1728	1711	1680	1669	1665	1648	1650	1713	1727	1760	1771	1782	1794
36	1772	1771	1756	1733	1706	1690	1655	1645	1642	1624	1628	1686	1706	1737	1745	1761	1772
37	1750	1750	1734	1709	1681	1665	1629	1621	1616	1600	1605	1660	1684	1713	1719	1739	1750
38	1728	1727	1712	1684	1656	1638	1599	1598	1587	1573	1581	1636	1660	1686	1693	1718	1728
39	1705	1703	1691	1658	1629	1609	1571	1573	1558	1547	1556	1612	1637	1658	1668	1696	1705
40	1683	1679	1667	1633	1604	1580	1547	1547	1528	1519	1530	1588	1614	1630	1642	1673	1683
41	1661	1657	1642	1609	1579	1552	1523	1522	1497	1489	1503	1562	1592	1600	1618	1649	1661
42	1638	1633	1614	1586	1555	1524	1499	1494	1467	1460	1474	1536	1567	1570	1594	1625	1638
43	1615	1609	1585	1563	1531	1497	1473	1461	1441	1428	1446	1510	1539	1541	1570	1602	1615
44	1589	1584	1555	1539	1503	1469	1444	1430	1414	1397	1414	1481	1509	1510	1547	1579	1589
45	1563	1556	1525	1516	1474	1440	1413	1396	1384	1366	1381	1450	1476	1480	1519	1553	1563
46	1536	1527	1496	1492	1444	1411	1382	1364	1354	1334	1350	1418	1444	1451	1492	1526	1536
47	1508	1500	1467	1467	1413	1382	1352	1331	1322	1301	1322	1383	1412	1427	1462	1499	1508
48	1474	1473	1440	1439	1381	1353	1321	1298	1290	1268	1291	1347	1381	1404	1431	1471	1474
49	1438	1445	1412	1407	1347	1322	1288	1266	1256	1237	1258	1311	1348	1380	1398	1440	1438
50	1400	1416	1383	1374	1316	1289	1253	1230	1223	1205	1225	1274	1313	1352	1365	1407	1400
51	1364	1387	1354	1339	1283	1255	1215	1189	1187	1174	1193	1237	1277	1320	1330	1371	1364
52	1330	1357	1327	1308	1246	1223	1176	1148	1150	1140	1158	1199	1241	1285	1294	1335	1330
53	1298	1325	1297	1278	1205	1191	1138	1110	1112	1108	1121	1163	1202	1250	1259	1299	1298
54	1268	1285	1265	1246	1167	1157	1102	1072	1076	1077	1085	1125	1166	1213	1225	1263	1268
55	1233	1244	1233	1213	1136	1119	1068	1038	1043	1047	1048	1086	1126	1173	1192	1229	1233
56	1196	1205	1198	1175	1109	1079	1032	1001	1009	1010	1012	1050	1086	1131	1159	1197	1196
57	1161	1165	1160	1138	1082	1036	994	964	969	973	975	1012	1048	1088	1126	1163	1161
58	1127	1125	1122	1097	1050	994	950	926	926	933	936	974	1007	1044	1094	1127	1127
59	1093	1083	1084	1050	1011	957	908	886	875	888	889	932	969	1002	1063	1088	1093
60	1058	1043	1048	1003	970	922	862	847	826	841	842	886	927	962	1032	1047	1058
61	1017	1003	1011	962	928	882	819	805	781	792	797	838	882	925	997	1007	1017

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

Report Format Number STD/QR4909-A/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	976	961	973	927	887	841	781	760	736	741	755	792	832	890	955	970	976
63	931	920	931	887	848	799	745	714	695	686	720	751	789	850	907	932	931
64	889	884	884	842	807	758	710	665	656	644	684	714	752	809	856	890	889
65	848	847	836	798	763	719	672	621	617	608	638	673	711	767	808	846	848
66	805	806	789	756	720	677	628	579	575	570	586	628	666	726	764	801	805
67	761	764	747	715	681	624	579	539	529	526	539	586	620	682	724	752	761
68	727	720	706	676	633	576	531	498	481	479	496	543	574	634	683	705	727
69	688	678	669	640	585	537	492	458	442	434	453	499	533	581	638	663	688
70	647	635	628	599	543	494	451	419	401	388	412	452	490	536	589	621	647
71	604	597	583	548	507	447	407	377	351	348	368	403	450	494	542	570	604
72	558	559	533	501	465	410	364	333	313	311	328	358	407	448	495	529	558
73	513	507	488	461	424	372	320	291	279	273	290	317	356	401	451	490	513
74	468	460	449	422	376	331	288	254	245	233	249	277	319	359	404	446	468
75	417	421	407	377	334	293	257	223	206	202	213	241	283	325	359	403	417
76	371	384	367	337	297	258	223	190	172	171	183	208	240	287	321	362	371
77	332	342	326	299	262	219	186	159	144	140	151	171	201	244	278	317	332
78	296	302	288	262	228	190	157	130	115	113	120	141	168	208	242	276	296
79	259	259	249	224	194	160	127	103	89	88	95	113	138	171	207	243	259
80	222	220	215	188	163	128	103	82	69	68	71	87	109	141	172	207	222
81	187	188	180	161	133	102	79	60	50	47	49	61	83	112	142	170	187
82	152	157	148	131	105	72	52	39	30	30	29	38	57	87	112	139	152
83	115	126	120	103	75	44	30	20	15	16	17	21	35	64	86	107	115
84	75	91	95	75	45	24	15	11	9	9	10	12	18	40	64	72	75
85	43	57	70	49	25	12	8	6	4	4	6	8	11	22	43	42	43
86	19	27	42	27	12	7	3	1	1	1	1	3	7	12	23	19	19
87	7	8	18	13	7	2	1	0	0	0	0	0	2	7	9	6	7
88	1	2	6	6	2	0	0	0	0	0	0	0	0	2	2	1	1
89	0	1	1	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-A/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
95	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
97	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	2	0	0	0	0	0	0	0
99	0	0	0	0	0	0	0	0	15	0	0	0	0	0	0	0
100	0	0	0	0	0	0	0	0	28	0	0	0	0	0	0	0
101	0	0	0	0	0	0	0	0	32	0	0	0	0	0	0	0
102	0	0	0	0	0	0	0	1	35	0	0	0	0	0	0	0
103	0	0	0	0	0	0	1	1	18	0	1	0	0	0	0	0
104	0	0	0	0	0	0	1	1	1	1	1	0	0	0	0	0
105	0	0	0	0	0	0	1	1	1	1	1	1	0	0	0	0
106	0	0	0	0	1	1	1	1	1	1	1	1	0	0	0	0
107	0	0	0	0	1	1	1	1	1	1	1	1	0	0	0	0
108	0	0	0	0	1	1	1	1	1	1	1	1	0	0	0	0
109	0	0	0	0	1	1	1	1	1	1	1	1	0	0	0	0
110	0	0	0	0	1	1	1	1	1	1	1	1	0	0	0	0
111	0	0	0	0	1	1	1	1	1	1	1	1	0	0	0	0
112	0	0	0	0	1	1	1	1	1	1	1	1	1	0	0	0
113	0	0	0	0	1	1	1	1	1	1	1	1	1	0	0	0
114	0	0	0	0	1	1	1	1	1	1	1	1	1	1	0	0
115	0	0	0	1	1	1	1	1	1	1	1	1	1	0	0	0
116	0	0	0	1	1	1	1	1	1	1	1	1	1	1	0	0
117	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	0
118	0	0	0	1	1	1	1	1	1	1	1	1	1	1	1	0
119	1	0	0	1	1	1	1	1	1	1	1	1	1	1	1	0
120	1	0	0	1	1	1	1	1	1	1	1	1	1	1	1	0
121	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
122	1	1	1	1	1	1	1	2	1	2	1	1	1	1	1	1
123	1	1	1	1	1	1	2	2	2	2	1	1	1	1	1	1
124	1	1	1	1	2	1	1	2	2	2	2	1	1	1	1	1
125	1	1	1	1	2	2	2	2	2	2	2	1	1	1	1	1

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

Report Format Number STD/QR4909-A/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	1	1	1	1	2	2	2	2	2	2	2	2	1	1	1	1	1
127	1	1	1	2	2	2	2	2	2	2	2	2	1	1	1	1	1
128	2	1	1	2	2	2	2	2	2	2	2	2	1	1	1	1	2
129	1	1	1	2	2	2	2	2	2	2	2	2	2	1	1	1	1
130	1	2	1	2	2	2	2	2	2	2	2	2	2	2	1	1	1
131	2	2	1	2	2	2	2	2	2	2	2	2	2	2	1	2	2
132	2	2	1	2	2	2	2	2	2	2	2	2	2	2	1	2	2
133	2	2	1	2	2	2	2	2	2	2	2	2	2	2	1	2	2
134	2	2	1	2	2	2	2	2	2	2	2	2	2	2	2	2	2
135	2	2	1	2	2	2	2	2	2	2	2	2	2	2	2	2	2
136	2	2	1	2	2	2	2	3	2	3	2	2	2	2	2	2	2
137	2	2	1	2	3	2	2	3	2	3	2	2	2	2	2	2	2
138	2	2	2	2	3	2	2	3	2	3	2	2	2	2	2	2	2
139	2	2	2	2	3	2	2	3	2	3	2	2	2	2	2	2	2
140	2	2	2	2	3	3	2	3	2	3	2	3	2	2	2	2	2
141	2	2	2	2	3	3	2	3	2	3	2	3	2	2	2	2	2
142	2	2	2	2	3	3	2	3	2	3	2	3	2	2	2	2	2
143	2	2	2	2	3	3	2	3	2	3	2	3	2	2	2	2	2
144	2	2	2	2	3	3	2	3	2	3	3	3	2	2	2	2	2
145	2	2	2	2	3	3	2	3	3	3	3	3	2	2	2	2	2
146	2	2	2	2	3	3	3	3	2	3	3	3	2	2	2	2	2
147	2	2	2	2	3	3	3	3	3	3	3	3	2	2	2	2	2
148	2	3	2	2	3	3	3	3	3	3	3	3	2	2	2	2	2
149	2	2	2	2	3	3	3	3	3	3	3	3	2	2	2	2	2
150	2	2	2	2	3	3	3	3	3	3	3	3	2	2	2	2	2
151	2	3	2	2	3	3	3	3	3	3	3	3	2	2	2	2	2
152	3	3	2	2	3	3	3	4	3	3	3	3	2	2	2	2	3
153	3	3	2	2	3	3	3	4	3	3	3	3	2	2	2	2	3
154	3	3	3	2	3	3	3	4	3	3	3	3	2	2	2	3	3
155	3	3	3	2	3	3	3	4	3	3	3	3	2	2	3	3	3
156	3	3	3	2	3	3	3	4	3	3	3	3	2	2	3	3	3
157	3	3	3	2	3	3	3	4	3	3	3	3	2	2	3	3	3

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

Report Format Number STD/QR4909-A/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	3	3	3	2	3	3	3	4	3	3	3	3	2	2	3	3	3
159	3	3	3	2	4	3	3	4	3	3	4	3	3	2	3	3	3
160	3	3	3	2	4	3	3	4	3	3	4	4	3	2	3	3	3
161	3	3	3	2	4	3	3	4	3	3	4	3	3	2	3	3	3
162	3	3	3	3	4	3	4	4	3	3	3	4	3	2	3	3	3
163	3	3	3	3	4	4	4	4	3	3	3	4	3	2	3	3	3
164	3	3	3	3	4	4	4	4	3	3	3	4	3	2	3	3	3
165	3	3	3	3	4	4	4	4	3	3	3	4	3	2	3	3	3
166	3	3	3	3	4	4	4	4	3	3	3	4	3	2	3	3	3
167	3	3	3	3	4	4	4	4	3	3	4	4	3	3	3	3	3
168	3	3	3	3	4	4	4	4	3	3	4	4	3	3	3	3	3
169	3	3	3	3	4	4	4	4	4	4	4	4	3	3	3	3	3
170	3	3	3	3	4	4	4	4	4	4	4	4	3	3	3	3	3
171	3	3	3	3	4	4	4	4	4	4	4	4	3	3	3	3	3
172	3	3	3	3	4	4	4	4	4	4	4	4	3	4	3	3	3
173	3	3	4	3	4	4	4	4	4	4	4	4	3	4	4	3	3
174	4	3	4	3	4	4	4	4	4	4	4	4	3	4	4	3	4
175	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	3	4
176	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	3	4
177	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	3	4
178	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	3	4
179	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	3	4
180	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4

**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 \*\*\*\*\***