



NVLAP LAB CODE 201011-0

Report No.: STD160203NB-J

## LM-79-08 Test Report

For

**CEA GROUP INTERNATIONAL CO.,LTD**

**(Brand Name:CEA EAEC)**

Sanjiali Industrial Zone Zhucheng Road Panshi North baixiang Yueqing Zhejiang China

### Outdoor Full-Cutoff Wall-mounted Area Luminaires

Model name(s): LWP6-50  
LWP6-50P

Remark: The letter “P” on the model name represents the product with photocell.

Representative (Tested) Model: LWP6-50(2700K)  
LWP6-50(5700K)

Model Difference: All construction and rating are the same, except CCT.

Test & Report By:

*Johnson Sun*

Engineer: Johnson Sun

Date: Jun.01,2016

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-H/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	Jun.01,2016
Test Report No.	STD160203NB-J
Laboratory Contact Name	Tommy Liang

**Product Information:**

Organization Name	CEA GROUP INTERNATIONAL CO.,LTD	
Brand Name	CEA EAEC	
Model Number	LWP6-50(2700K)	
SKU (if available)	N/A	
Type of Luminaire (for integral lamps, list base type and lamp type)	Outdoor Full-Cutoff Wall-mounted Area 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	--	48.06	W
Input Current	--	0.4093	A
Input Voltage (ac)	--	120.0	V
Power Factor	--	0.9784	
Off-State Power	--	0	W

**Photometric Characteristics**

Total Initial Lumen Output	--	4572.3	lm
Initial Lumen Efficacy	--	95.14	lm/w
Correlated color temperature / CCT	2739	--	K
Color rendering index / CRI	70.0	--	
R9 Value	0	--	
Duv	0.0014	--	
<b>Luminous Intensity Distribution</b>			
Center beam candlepower (if applicable)		2096	cd
Beam angle (if applicable)		94.1	°
Zonal lumens in the 0°-60° zone	---	88.4	%
Zonal lumens in the 60°-90° zone		11.4	%
Zonal lumens in the 90°-120° zone		0	%
Zonal lumens in the 120°-180° zone		0.1	%

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Date of Test Report	Jun.01,2016
Test Report No.	STD160203NB-J
Laboratory Contact Name	Tommy Liang

**Product Information:**

Organization Name	CEA GROUP INTERNATIONAL CO.,LTD	
Brand Name	CEA EAEC	
Model Number	LWP6-50(5700K)	
SKU (if available)	N/A	
Type of Luminaire (for integral lamps, list base type and lamp type)	Outdoor Full-Cutoff Wall-mounted Area Luminaires	
Luminaire Aperture (for downlights)	--	in.
Luminaire Length	--	mm
Luminaires Width	--	mm
Number of Units (modular products)	N/A	

Electrical Measurements:	Integrating Sphere	Goniophotometer	
	Output	Output	
Input Wattage	48.72	--	W
Input Current	0.4146	--	A
Input Voltage (ac)	120.0	--	V
Power Factor	0.9792	--	
Off-State Power	0	--	W

**Photometric Characteristics**

Total Initial Lumen Output	4689	--	lm
Initial Lumen Efficacy	96.24	--	lm/w
Correlated color temperature / CCT	5812	--	K
Color rendering index / CRI	75.2	--	
R9 Value	0	--	
Duv	-0.0034	--	
<b>Luminous Intensity Distribution</b>			
Center beam candlepower (if applicable)	-----		cd
Beam angle (if applicable)			°
Zonal lumens in the 0 °-60 °zone			%
Zonal lumens in the 60 °-90 °zone			%
Zonal lumens in the 90 °-120 °zone			%
Zonal lumens in the 120 °-180 °zone			%

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Date of Receipt	:May.25,2016
Date of Test	: May.27,2016
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  $25\text{ }^{\circ}\text{C} \pm 1\text{ }^{\circ}\text{C}$ , 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  $1\text{ }^{\circ}$  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 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	CEA EAEC
Model Number	LWP6-50
Luminaire Type	Outdoor Full-Cutoff Wall-mounted Area Luminaires
Rated Voltage / Frequency	100 ~ 277 Vac, 50/60Hz
Nominal Power	50W
Rated Initial Lamp Lumen	--
Declared CCT	2700K,3000K,3500K,4000K,4500K,5000K,5700K
LED Manufacturer	Shenzhen TongYiFang Optoelectronic TechnologyCO.,LTD
LED Model	M25-01L-9W-1
Sample Receipt Date	May.25,2016
Sample Number	STD160203NB-J1(2700K),J2(5700K)

**Photo**



<b>2.1 Electrical, Photometric and Chromaticity Measurements</b> (Refer to Work Instruction QD25)
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<b>IES LM-79 2008</b>
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<b>Test date</b>	2016-05-27	<b>Test Ambient:</b>	25.2 °C
<b>Test Orientation</b>	As intended	<b>Stabilization Time (min)</b>	90
<b>Model Number</b>	LWP6-50(2700K)		

**Electrical Measurement:**

Sample No.	Voltage (Vac)	Frequency (Hz)	Current (A)	Power (W)	Power Factor	THD %
STD160203	120.0	60	0.4093	48.06	0.9784	10.32
NB-J1	277.0	60	0.1862	46.62	0.9038	12.39

**Color Data:**

Parameter	Result
Test Voltage (V)	120.0
Frequency (Hz)	60
Color Rendering Index (CRI)	70.0
R9	0
CCT (K)	2739
Chromaticity (x, y)	x=0.4591 y=0.4141
Chromaticity (u', v')	u'=0.2604 v'=0.5286
Duv	0.0014

Special Color Rendering Indices			
R1	66	R9	0
R2	80	R10	54
R3	93	R11	54
R4	63	R12	40
R5	64	R13	68
R6	72	R14	95
R7	79	R15	60
R8	43	--	--

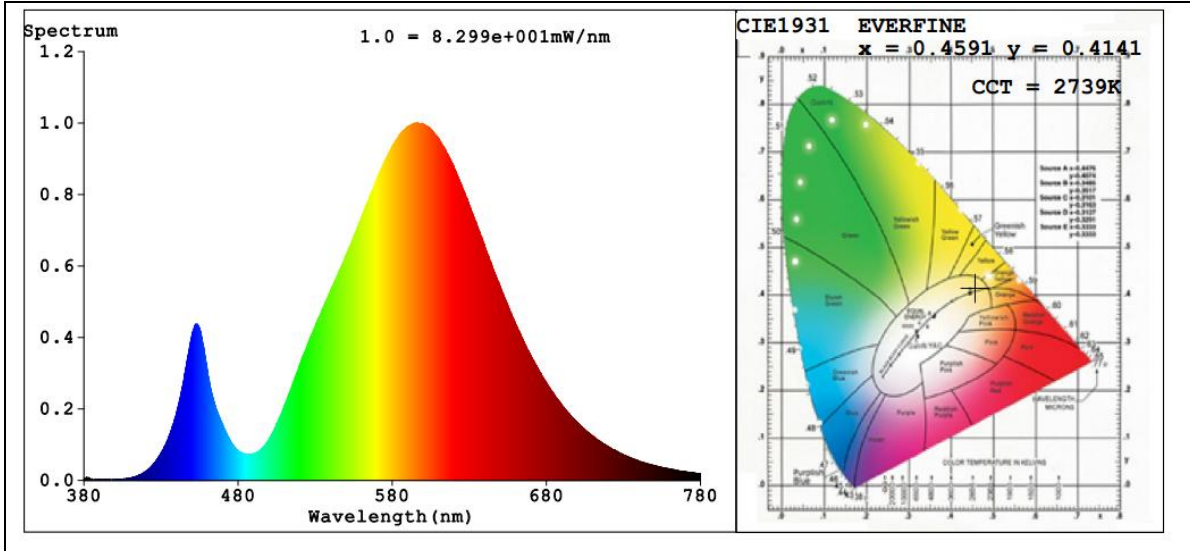
**Goniophotometer Method :**

Parameter	Result
Test Voltage (V)	120.0
Frequency (Hz)	60
Total Luminous (lm)	4572.3
Luminous Efficacy (lm/W)	95.14
Beam Angle °	94.1
Center Beam Candle Power (cd)	2096

**Goniophotometer Method for 277V:**

Parameter	Result
Test Voltage (V)	277.0
Frequency (Hz)	60
Total Luminous (lm)	4467.5
Luminous Efficacy (lm/W)	95.83

**Spectral Power Distribution & Chromaticity Diagram**



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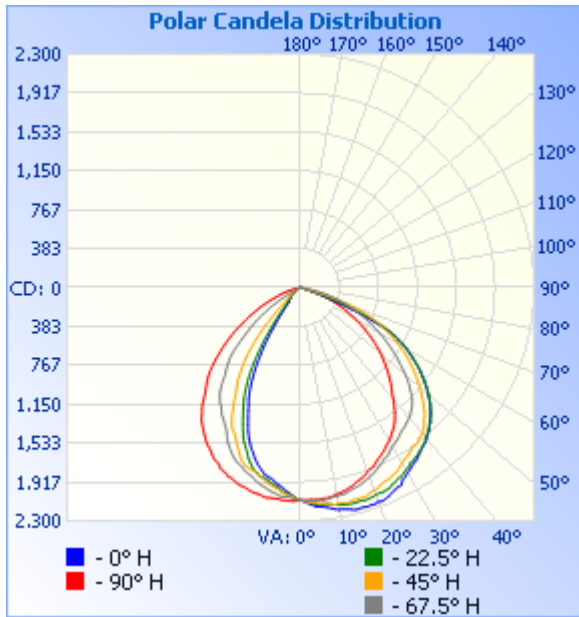
**Zonal Lumen Tabulation**

Zonal Lumen Summary		
Zone	Lumens	% Luminaire
0-30	1,586.8	34.7%
0-40	2,497.4	54.6%
0-60	4,043.2	88.4%
60-90	522.0	11.4%
70-100	105.2	2.3%
90-120	0.7	0%
0-90	4,565.2	99.9%
90-180	6.5	0.1%
0-180	4,571.7	100%

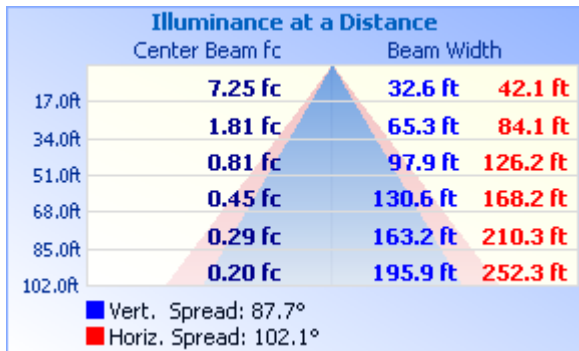
Lumens Per Zone					
Zone	Lumens	% Total	Zone	Lumens	% Total
0-10	197.9	4.3%	90-100	0.0	0%
10-20	564.8	12.4%	100-110	0.1	0%
20-30	824.2	18.0%	110-120	0.6	0%
30-40	910.6	19.9%	120-130	1.0	0%
40-50	855.0	18.7%	130-140	1.2	0%
50-60	690.8	15.1%	140-150	1.3	0%
60-70	416.8	9.1%	150-160	1.2	0%
70-80	99.6	2.2%	160-170	0.8	0%
80-90	5.6	0.1%	170-180	0.3	0%



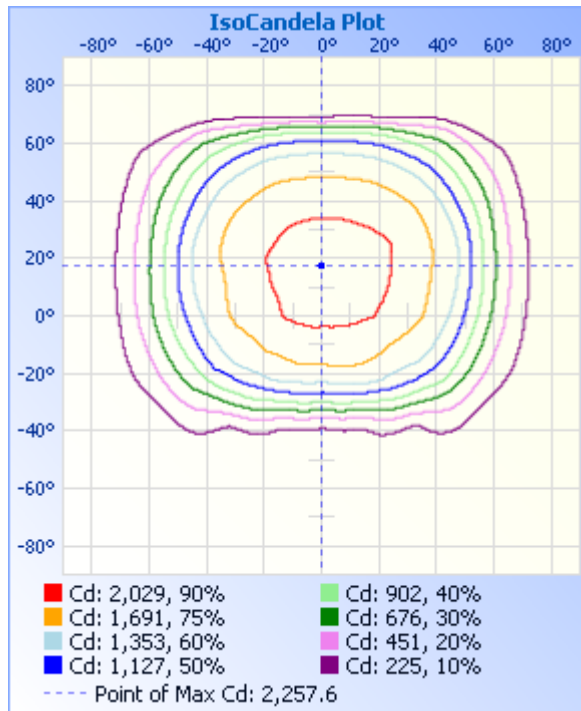
### Photometric Data



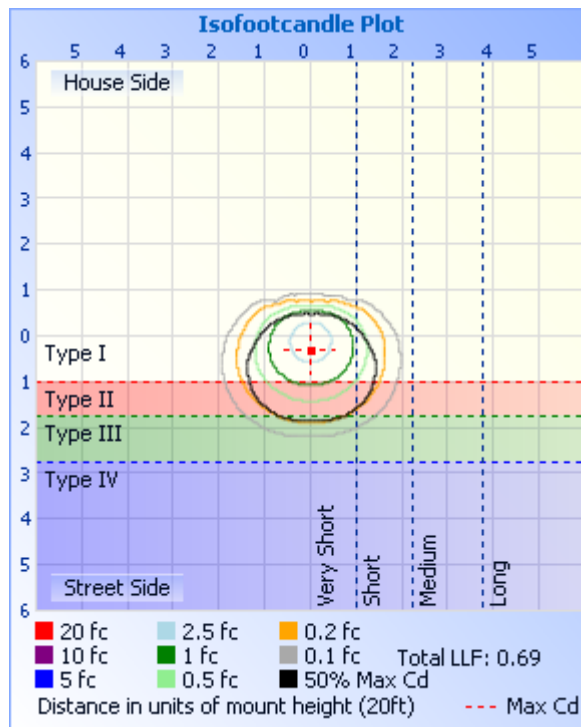
### Illuminance Plots



### 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	2096	2096	2096	2096	2096	2096	2096	2096	2096	2096	2096	2096	2096	2096	2096	2096	2096
1	2109	2101	2104	2093	2094	2113	2085	2084	2078	2086	2081	2089	2099	2092	2122	2114	2109
2	2128	2110	2115	2094	2095	2094	2073	2066	2054	2063	2064	2083	2106	2111	2120	2126	2128
3	2144	2120	2121	2100	2090	2081	2065	2052	2032	2044	2051	2067	2101	2114	2134	2130	2144
4	2163	2146	2127	2108	2094	2072	2050	2032	2011	2028	2039	2066	2101	2108	2142	2125	2163
5	2166	2150	2139	2098	2096	2059	2034	2017	1983	2021	2031	2066	2101	2121	2145	2149	2166
6	2173	2149	2139	2110	2089	2040	2004	1992	1960	1988	2006	2059	2094	2118	2153	2150	2173
7	2183	2146	2143	2101	2092	2038	1998	1976	1945	1972	1990	2042	2093	2113	2151	2165	2183
8	2196	2157	2152	2094	2086	2012	1971	1957	1916	1955	1977	2032	2092	2114	2167	2163	2196
9	2212	2169	2168	2086	2077	1989	1962	1938	1899	1938	1963	2019	2097	2120	2168	2181	2212
10	2221	2170	2157	2085	2064	1989	1943	1939	1886	1920	1948	2001	2091	2113	2168	2188	2221
11	2222	2178	2160	2080	2058	1977	1940	1927	1872	1906	1923	1988	2080	2105	2174	2197	2222
12	2233	2184	2171	2079	2049	1958	1941	1899	1840	1907	1901	1974	2074	2097	2166	2200	2233
13	2243	2185	2167	2066	2040	1940	1921	1868	1812	1879	1891	1954	2069	2097	2168	2204	2243
14	2255	2189	2155	2052	2026	1916	1899	1830	1778	1862	1867	1930	2064	2097	2171	2204	2255
15	2252	2184	2160	2044	2012	1901	1869	1783	1740	1834	1859	1913	2048	2098	2166	2203	2252
16	2249	2182	2152	2037	1995	1892	1822	1736	1696	1797	1852	1902	2041	2094	2168	2202	2249
17	<b>2258</b>	2190	2160	2023	1980	1880	1783	1704	1659	1759	1839	1886	2038	2096	2175	2215	<b>2258</b>
18	2251	2184	2145	2013	1969	1866	1744	1676	1613	1709	1820	1859	2027	2078	2181	2204	2251
19	2254	2181	2130	1998	1951	1845	1700	1660	1566	1663	1795	1843	2010	2070	2171	2203	2254
20	2244	2173	2127	1988	1927	1814	1657	1625	1509	1624	1753	1831	1996	2066	2163	2219	2244
21	2253	2167	2117	1971	1913	1784	1630	1574	1449	1580	1709	1810	1993	2061	2153	2206	2253
22	2242	2171	2097	1954	1905	1752	1622	1505	1383	1518	1673	1784	1970	2056	2146	2202	2242
23	2228	2164	2085	1938	1882	1715	1615	1434	1318	1460	1629	1756	1962	2043	2140	2194	2228
24	2215	2160	2077	1917	1859	1672	1584	1364	1261	1398	1587	1721	1946	2034	2145	2190	2215
25	2197	2138	2078	1899	1840	1636	1548	1306	1214	1341	1564	1691	1915	2024	2141	2178	2197
26	2187	2129	2061	1879	1822	1609	1499	1253	1153	1282	1542	1654	1902	2005	2141	2178	2187
27	2183	2115	2051	1869	1805	1577	1432	1199	1082	1231	1495	1605	1887	1992	2131	2168	2183
28	2142	2107	2040	1851	1780	1550	1372	1138	1007	1169	1444	1566	1859	1984	2115	2158	2142
29	2130	2090	2017	1827	1759	1521	1313	1078	931	1097	1381	1540	1831	1955	2098	2130	2130

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30	2105	2074	1996	1807	1744	1498	1261	1013	851	1027	1320	1512	1812	1949	2097	2115	2105
31	2092	2065	1978	1796	1721	1474	1210	937	763	949	1255	1491	1793	1932	2079	2097	2092
32	2072	2040	1969	1781	1693	1462	1162	864	680	863	1197	1467	1764	1919	2056	2079	2072
33	2056	2033	1957	1766	1670	1445	1113	782	595	776	1154	1433	1738	1893	2058	2059	2056
34	2044	2018	1940	1748	1644	1398	1072	698	503	693	1110	1402	1709	1876	2042	2039	2044
35	2022	2012	1917	1729	1615	1350	1023	617	423	609	1049	1384	1681	1853	2026	2019	2022
36	2004	1989	1919	1719	1583	1296	976	537	350	524	991	1354	1653	1834	2010	2005	2004
37	1986	1979	1915	1708	1545	1243	919	456	287	445	935	1325	1624	1807	1988	1988	1986
38	1970	1964	1891	1694	1501	1196	861	382	233	372	870	1286	1581	1782	1970	1965	1970
39	1955	1951	1879	1679	1458	1173	798	315	199	308	803	1241	1544	1758	1955	1958	1955
40	1933	1920	1874	1668	1415	1145	734	255	182	255	729	1187	1505	1739	1937	1939	1933
41	1910	1905	1841	1651	1374	1127	665	206	175	214	653	1132	1455	1717	1919	1920	1910
42	1891	1882	1821	1629	1340	1087	591	177	166	192	576	1101	1409	1689	1901	1895	1891
43	1861	1861	1782	1607	1306	1041	517	162	155	181	502	1063	1373	1672	1878	1866	1861
44	1830	1847	1761	1583	1267	979	446	151	148	170	426	1025	1335	1650	1849	1848	1830
45	1806	1809	1727	1555	1232	913	380	137	141	157	355	989	1306	1621	1818	1825	1806
46	1781	1784	1682	1519	1196	863	317	127	134	147	291	938	1267	1595	1784	1800	1781
47	1747	1750	1651	1476	1157	817	259	121	125	141	233	884	1229	1564	1744	1770	1747
48	1717	1722	1612	1442	1117	774	210	116	117	135	189	818	1185	1529	1707	1737	1717
49	1680	1686	1574	1401	1076	735	171	110	107	128	157	757	1133	1496	1668	1699	1680
50	1643	1649	1538	1354	1045	692	143	104	96	121	140	703	1084	1461	1621	1671	1643
51	1607	1609	1493	1310	1004	649	126	97	85	113	131	653	1034	1415	1579	1631	1607
52	1564	1572	1454	1261	965	604	112	88	75	103	119	601	992	1363	1540	1598	1564
53	1524	1528	1416	1212	927	558	98	78	66	92	106	551	940	1321	1495	1558	1524
54	1485	1482	1374	1177	880	511	87	68	58	81	96	501	894	1275	1450	1513	1485
55	1445	1441	1334	1132	840	467	79	58	51	70	87	448	848	1224	1405	1471	1445
56	1395	1399	1293	1084	797	422	71	50	46	60	80	396	799	1168	1364	1422	1395
57	1348	1353	1250	1036	756	373	63	44	42	52	73	346	749	1119	1313	1373	1348
58	1300	1306	1206	991	717	331	55	39	39	46	67	296	699	1069	1265	1321	1300
59	1253	1255	1156	949	673	283	46	35	35	40	60	246	654	1017	1213	1271	1253
60	1205	1206	1110	906	631	235	38	32	32	36	53	203	606	966	1163	1219	1205
61	1156	1153	1061	860	590	191	30	29	30	33	45	161	565	915	1118	1173	1156

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62	1094	1095	1018	815	550	152	25	27	28	30	38	124	522	865	1068	1119	1094
63	1037	1040	970	774	510	118	21	25	26	28	31	92	483	814	1010	1060	1037
64	932	980	915	731	472	91	19	23	24	26	26	68	444	762	959	1004	932
65	808	897	864	686	432	70	17	22	23	24	22	51	406	715	904	932	808
66	682	793	812	640	397	53	16	20	21	22	20	42	368	668	854	836	682
67	549	673	756	595	358	43	15	19	19	21	18	35	331	619	793	721	549
68	417	546	698	554	320	37	14	17	18	20	16	28	298	574	739	595	417
69	294	414	635	516	286	30	13	16	17	18	15	24	267	529	682	466	294
70	194	293	571	473	252	24	12	15	16	17	14	20	241	480	619	337	194
71	119	190	491	430	227	20	11	14	15	16	12	17	218	431	552	228	119
72	75	115	391	391	204	17	10	13	14	15	11	14	194	387	468	141	75
73	54	69	289	352	183	14	9	12	13	14	11	13	170	344	368	83	54
74	42	49	194	314	161	12	8	12	12	13	10	11	147	303	266	55	42
75	34	38	117	273	137	10	8	11	11	12	9	10	126	266	173	42	34
76	28	30	67	232	113	9	7	10	11	11	8	8	104	228	102	34	28
77	23	24	43	189	91	8	6	9	10	11	8	7	83	188	57	27	23
78	19	19	32	154	70	7	6	9	9	10	7	6	64	152	37	22	19
79	15	15	25	112	54	6	5	8	8	9	7	6	47	118	28	18	15
80	12	12	19	65	39	5	5	8	8	8	6	5	32	82	22	14	12
81	9	9	14	37	29	4	4	7	7	7	5	4	23	47	17	11	9
82	4	6	10	21	18	3	4	6	7	7	5	3	17	27	12	8	4
83	2	2	6	14	13	2	3	5	6	6	4	2	11	16	8	3	2
84	1	1	3	9	8	1	3	5	5	5	3	2	7	10	4	2	1
85	1	1	1	5	4	1	2	3	4	4	3	1	5	7	2	1	1
86	0	0	0	2	2	0	2	3	3	3	2	1	3	3	1	0	0
87	0	0	0	0	0	0	1	2	2	2	1	0	1	1	0	0	0
88	0	0	0	0	0	0	0	1	1	1	1	0	0	0	0	0	0
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

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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	0	0	0	0	0	0	0	0
99	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
100	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
102	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
104	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
106	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
107	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
108	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0
109	0	0	0	0	0	1	1	0	0	1	1	0	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	0	0	0	0
113	0	0	0	0	1	1	1	1	1	1	1	1	0	0	0	0
114	0	0	0	0	1	1	1	1	1	1	1	1	0	0	0	0
115	0	0	0	0	1	1	1	1	1	1	1	1	0	0	0	0
116	0	0	0	0	1	1	1	1	1	1	1	1	0	0	0	0
117	0	0	0	0	1	1	2	1	2	1	1	1	0	0	0	0
118	0	0	0	0	1	1	2	1	2	1	1	1	0	0	0	0
119	0	0	0	0	1	2	2	2	2	1	2	1	1	0	0	0
120	0	0	0	0	1	2	2	2	2	1	2	2	1	0	0	0
121	0	0	0	0	1	2	2	2	2	2	2	2	1	0	0	0
122	0	0	0	0	1	2	2	2	2	2	2	2	1	0	0	0
123	0	0	0	0	1	2	2	2	2	2	2	2	1	0	0	0
124	0	0	0	0	1	2	2	2	2	2	2	2	1	0	0	0
125	0	0	0	0	1	2	2	2	2	2	2	2	1	0	0	0

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126	0	0	0	0	1	2	2	2	2	2	2	2	1	0	0	0	0
127	0	0	0	0	1	2	2	3	3	2	2	2	1	0	0	0	0
128	0	0	0	1	1	2	2	3	3	2	2	2	1	0	0	0	0
129	0	0	0	1	1	2	2	3	3	3	2	2	2	1	0	0	0
130	0	0	0	1	2	2	3	3	3	3	2	2	2	1	0	0	0
131	0	0	0	1	2	2	3	3	3	3	2	2	2	1	0	0	0
132	0	0	0	1	2	2	3	3	3	3	2	2	2	1	0	0	0
133	0	0	0	1	2	2	3	3	3	3	2	2	2	1	0	0	0
134	0	0	0	1	2	2	3	4	3	3	2	2	2	1	0	0	0
135	0	0	0	1	2	2	3	3	3	3	2	2	2	1	0	0	0
136	0	0	0	1	2	3	3	3	3	3	2	2	2	1	0	0	0
137	0	0	0	1	2	2	3	3	3	3	2	2	2	1	0	0	0
138	0	0	0	1	2	3	3	3	3	3	2	2	2	1	0	0	0
139	0	0	0	1	2	3	3	4	3	3	2	2	2	1	0	0	0
140	0	0	0	1	2	3	3	4	3	3	2	2	2	1	0	0	0
141	0	0	1	1	2	3	3	4	3	3	2	2	2	1	0	0	0
142	0	0	1	1	2	3	3	4	3	3	2	2	2	1	0	0	0
143	0	0	1	2	2	3	3	4	3	3	3	2	2	1	1	0	0
144	0	0	1	2	2	3	3	4	3	3	3	2	2	1	1	0	0
145	0	0	1	2	2	3	3	4	3	3	3	2	2	2	1	1	0
146	0	1	1	2	3	3	3	4	3	3	3	2	2	1	1	1	0
147	0	1	1	2	3	3	3	4	3	3	3	2	2	2	1	1	0
148	1	1	1	2	3	3	3	4	3	3	3	2	2	2	1	1	1
149	1	1	1	2	3	3	3	4	3	3	3	3	2	2	1	1	1
150	1	1	1	2	3	3	3	4	3	3	3	3	2	2	1	1	1
151	1	1	2	2	3	3	3	4	3	3	3	3	2	2	2	1	1
152	1	1	2	2	3	3	3	4	3	3	3	3	2	2	2	1	1
153	1	1	2	2	3	3	3	4	3	3	3	3	2	2	2	2	1
154	2	2	2	2	3	3	3	4	3	3	3	3	2	2	2	2	2
155	2	2	2	2	2	3	3	4	3	3	3	3	2	2	2	2	2
156	2	2	2	2	2	3	3	4	3	3	3	3	2	2	2	2	2
157	2	2	2	3	2	3	3	4	3	3	3	3	2	2	2	2	2

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158	2	2	3	3	2	3	3	4	3	3	3	3	2	2	3	2	2
159	2	2	3	3	2	3	3	4	3	3	3	3	2	2	3	2	2
160	2	2	3	3	3	3	3	4	3	3	3	3	2	2	3	2	2
161	2	2	3	3	3	3	3	4	3	3	3	3	2	2	3	2	2
162	2	2	3	3	3	3	3	4	3	3	3	3	2	2	3	2	2
163	2	2	3	3	3	3	3	4	3	3	3	3	2	2	3	3	2
164	2	2	3	3	3	3	3	4	3	3	3	3	2	2	3	3	2
165	2	2	3	3	3	3	3	4	3	3	3	3	2	2	3	3	2
166	2	2	3	3	3	3	3	4	3	3	3	3	2	2	3	3	2
167	0	2	3	3	3	3	3	4	3	3	3	3	2	2	3	3	0
168	2	3	3	3	3	3	3	4	4	4	3	4	3	2	3	3	2
169	3	3	3	3	3	3	4	4	4	4	4	4	3	3	3	3	3
170	3	3	4	3	3	3	4	4	4	4	4	4	3	3	4	3	3
171	3	3	4	3	3	3	4	4	4	4	4	4	3	3	4	3	3
172	3	3	4	3	3	3	4	4	4	5	4	4	3	3	4	3	3
173	3	3	4	3	3	3	4	4	4	5	4	4	3	3	4	3	3
174	4	3	4	3	3	3	4	4	4	5	4	4	3	3	4	3	4
175	4	4	4	3	3	3	4	4	4	5	4	4	3	3	4	4	4
176	4	4	4	3	3	3	4	4	4	5	4	4	3	3	4	4	4
177	4	4	4	3	3	3	4	4	4	4	4	4	3	3	4	4	4
178	4	4	4	3	3	3	4	4	4	4	4	4	3	4	4	4	4
179	4	4	4	3	3	3	4	4	4	4	4	4	3	4	4	4	4
180	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4



<b>2.2 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>	2016-05-27	<b>Test Ambient:</b>	25.2 °C
<b>Test Orientation</b>	As intended	<b>Stabilization Time (min)</b>	90
<b>Model Number</b>	LWP6-50(5700K)		

**Electrical Measurement:**

Sample No.	Voltage (Vac)	Frequency (Hz)	Current (A)	Power (W)	Power Factor	THD %
STD160203	120.0	60	0.4146	48.72	0.9792	10.27
NB-J2	277.0	60	0.1887	47.27	0.9045	12.34

**Sphere-Spectroradiometer Method :**

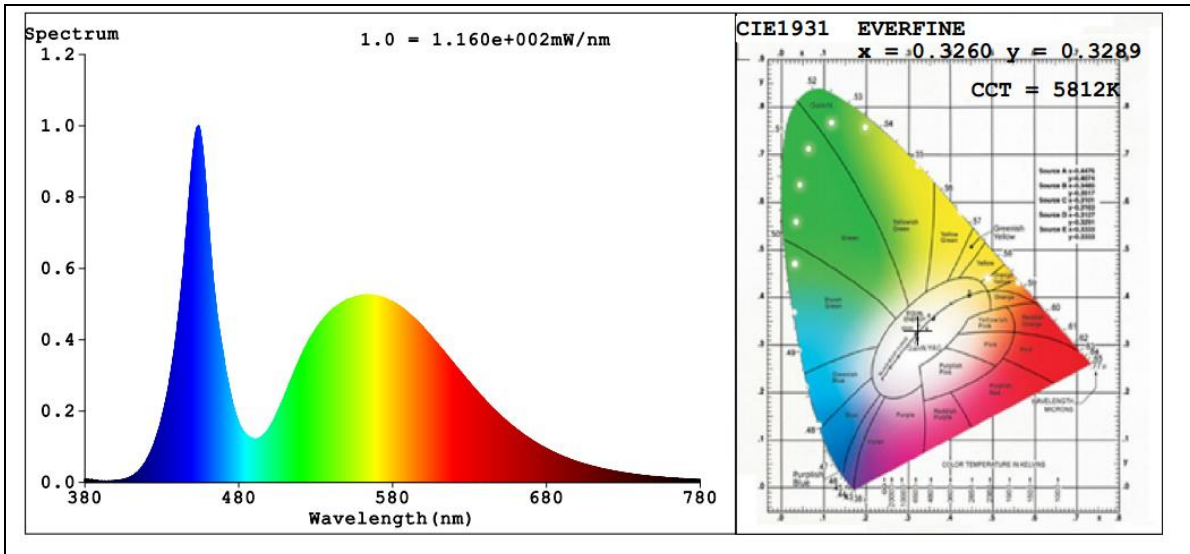
Parameter	Result
Test Voltage (V)	120.0
Frequency (Hz)	60
Color Rendering Index (CRI)	75.2
R9	0
CCT (K)	5812
Chromaticity (x, y)	x=0.3260 y=0.3289
Chromaticity (u', v')	u'=0.2072 v'=0.4702
Duv	-0.0034
Total Initial Lumen Output(lm)	4689
Initial Lumen Efficacy(lm/w)	96.24

Special Color Rendering Indices			
R1	74	R9	0
R2	81	R10	50
R3	82	R11	68
R4	74	R12	44
R5	73	R13	75
R6	71	R14	89
R7	84	R15	72
R8	63	--	--

**Sphere-Spectroradiometer Method for 277V:**

Parameter	Result
Test Voltage (V)	277.0
Frequency (Hz)	60
Total Initial Lumen Output(lm)	4582
Initial Lumen Efficacy(lm/w)	96.93

**Spectral Power Distribution & Chromaticity Diagram**



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