



Report No.: GZE150406-M

NVLAP LAB CODE 201011-0

LM-79-08 Test Report

For

PREMIUM QUALITY LIGHTING

(Brand Name: SUPERIOR LIFE®)

2285 Ward Avenue, Simi Valley, CA 93065

Parking Garage Luminaires

Model name(s): 83512

Representative (Tested) Model: 83510 (3000K) 83512 (5000K)

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

Test & Report By:

Sean Zhuo

Engineer: Sean Zhuo

Date: May.20,2015

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

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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.20,2015
Test Report No.	GZE150406-M
Laboratory Contact Name	Tommy Liang

Product Information:

Organization Name	PREMIUM QUALITY LIGHTING	
Brand Name	SUPERIOR LIFE®	
Model Number	83510 (3000K)	
SKU (if available)	N/A	
Type of Luminaire (for integral lamps, list base type and lamp type)	Parking Garage 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

	Integrating Sphere	Goniophotometer	
Input Wattage	--	97.60	W
Input Current	--	0.8183	A
Input Voltage (ac)	--	120.1	V
Power Factor	--	0.9931	
Off-State Power	--	0	W

Photometric Characteristics

	Integrating Sphere	Goniophotometer	
Total Initial Lumen Output	--	9315.1	lm
Initial Lumen Efficacy	--	95.44	lm/w
Correlated color temperature / CCT	3115	--	K
Color rendering index / CRI	74.4	--	
R9 Value	0	--	
Duv	0.0009	--	

Luminous Intensity Distribution

	Integrating Sphere	Goniophotometer	
Center beam candlepower (if applicable)	-----	5963	cd
Beam angle (if applicable)		95.4	°
Zonal lumens in the 0°-60° zone		66.9	%
Zonal lumens in the 60°-90° zone		32.4	%
Zonal lumens in the 90°-120° zone		0.3	%
Zonal lumens in the 120°-180° zone		0.4	%

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Laboratory Contact Name	Tommy Liang

Product Information:

Organization Name	PREMIUM QUALITY LIGHTING	
Brand Name	SUPERIOR LIFE®	
Model Number	83512 (5000K)	
SKU (if available)	N/A	
Type of Luminaire (for integral lamps, list base type and lamp type)	Parking Garage 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	97.53	--	W
Input Current	0.8172	--	A
Input Voltage (ac)	120.0	--	V
Power Factor	0.9945	--	
Off-State Power	0	--	W

Photometric Characteristics

Total Initial Lumen Output	9780	--	lm
Initial Lumen Efficacy	100.28	--	lm/w
Correlated color temperature / CCT	5152	--	K
Color rendering index / CRI	75.0	--	
R9 Value	0	--	
Duv	-0.0001	--	

Luminous Intensity Distribution

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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Test Specifications:	
Date of Receipt	: Apr.14,2015
Date of Test	: Apr.21,2015
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 $25^{\circ}\text{C} \pm 1^{\circ}\text{C}$, 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 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 $25^{\circ}\text{C} \pm 1^{\circ}\text{C}$. 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.

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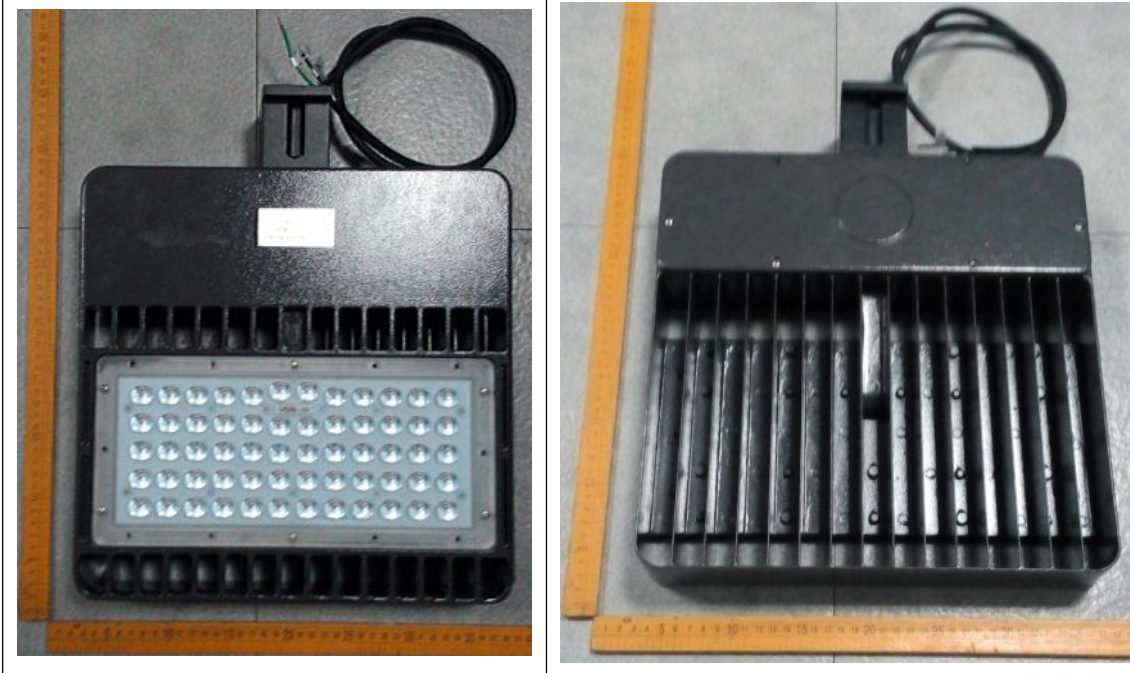
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1. Product Information:

Brand Name	SUPERIOR LIFE®
Model Number	83512
Luminaire Type	Parking Garage Luminaires
Rated Voltage / Frequency	110 ~ 240/277Vac, 50/60Hz
Nominal Power	100W
Rated Initial Lamp Lumen	--
Declared CCT	3000K,3500K,4000K,4500K,5000K
LED Manufacturer	SAMSUNG ELECTRONICS Co.,Ltd
LED Model	LH351B
Sample Receipt Date	Apr.14,2015
Sample Number	GZE150406-M1(3000K),M2(5000K)

Photo


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

Test date	2015-04-21	Test Ambient:	25.2 ° C
Test Orientation	As intended	Stabilization Time (min)	90
Model Number	83510 (3000K)		

Electrical Measurement:

Sample No.	Voltage (Vac)	Frequency (Hz)	Current (A)	Power (W)	Power Factor	THD %
GZE150406	120.1	60	0.8183	97.60	0.9931	7.83
-M1	277.0	60	0.3806	98.01	0.9297	13.62

Sphere-Spectroradiometer Method:

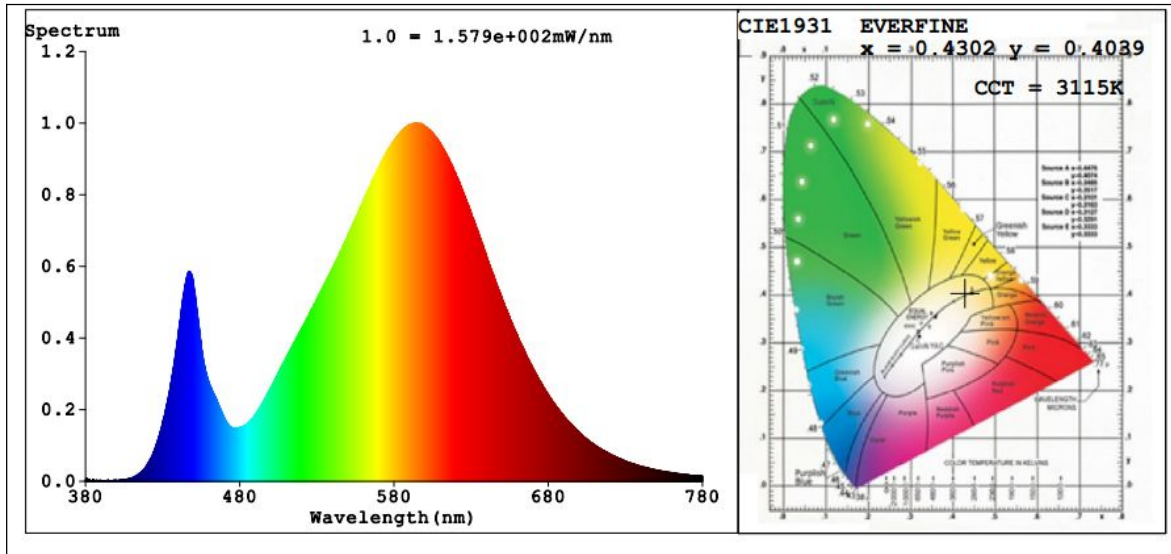
Parameter	Result
Test Voltage (V)	120.1
Frequency (Hz)	60
Color Rendering Index (CRI)	74.4
R9	0
CCT (K)	3115
Chromaticity (x, y)	x=0.4302 y=0.4039
Chromaticity (u', v')	u'=0.2463 v'=0.5203
Duv	0.0009

Special Color Rendering Indices			
R1	71	R9	0
R2	83	R10	61
R3	94	R11	66
R4	71	R12	54
R5	70	R13	73
R6	76	R14	96
R7	80	R15	64
R8	50	--	--

Goniophotometer Method:

Parameter	Result
Test Voltage (V)	120.1
Frequency (Hz)	60
Total Luminous (lm)	9315.1
Luminous Efficacy (lm/W)	95.44
Beam Angle°	95.4
Center Beam Candle Power (cd)	5963
S/MH(C0/180)	0.90
S/MH(C90/270)	1.59

Spectral Power Distribution & Chromaticity Diagram



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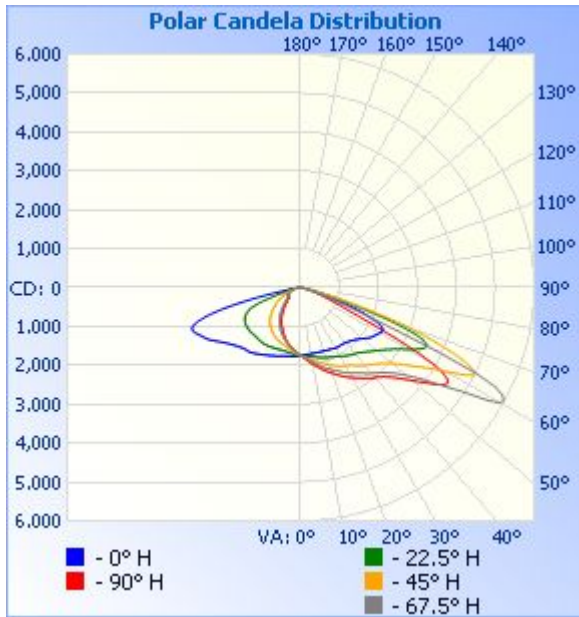
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Zonal Lumen Tabulation

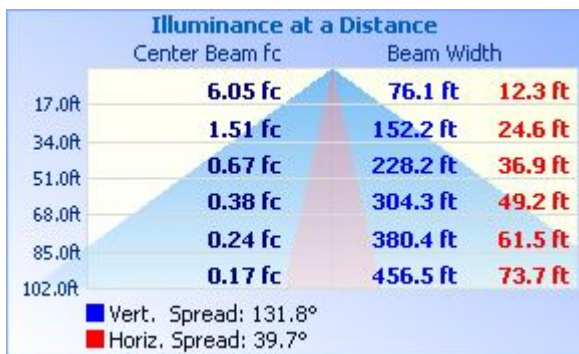
Zonal Lumen Summary			
Zone	Lumens	% Lamp	% Luminaire
0-30	1,516.5	16.3%	16.3%
0-40	2,692.4	28.9%	28.9%
0-60	6,228.8	66.9%	66.9%
60-90	3,019.7	32.4%	32.4%
70-100	886.2	9.5%	9.5%
90-120	25.3	0.3%	0.3%
0-90	9,248.5	99.3%	99.3%
90-180	66.1	0.7%	0.7%
0-180	9,314.6	100%	100%

Lumens Per Zone					
Zone	Lumens	% Total	Zone	Lumens	% Total
0-10	167.0	1.8%	90-100	5.6	0.1%
10-20	504.2	5.4%	100-110	8.5	0.1%
20-30	845.2	9.1%	110-120	11.2	0.1%
30-40	1,175.9	12.6%	120-130	11.9	0.1%
40-50	1,507.5	16.2%	130-140	10.2	0.1%
50-60	2,029.0	21.8%	140-150	8.0	0.1%
60-70	2,139.1	23.0%	150-160	6.0	0.1%
70-80	797.2	8.6%	160-170	3.5	0%
80-90	83.4	0.9%	170-180	1.2	0%

Photometric Data



Illuminance Plots



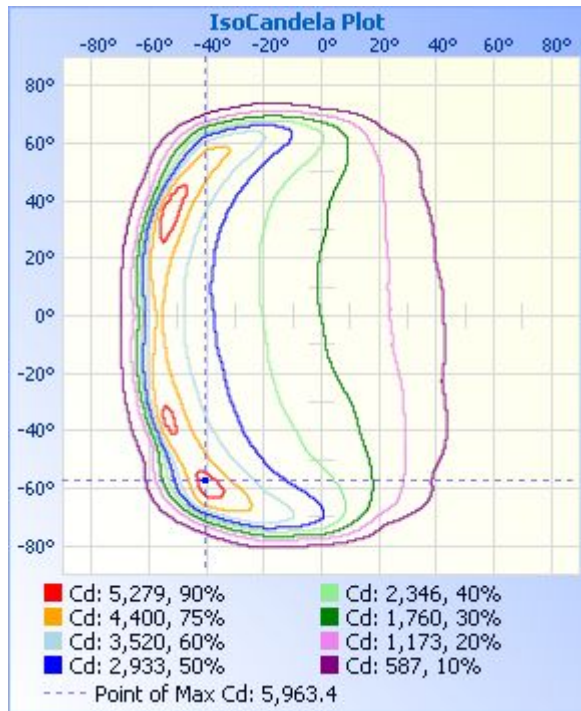
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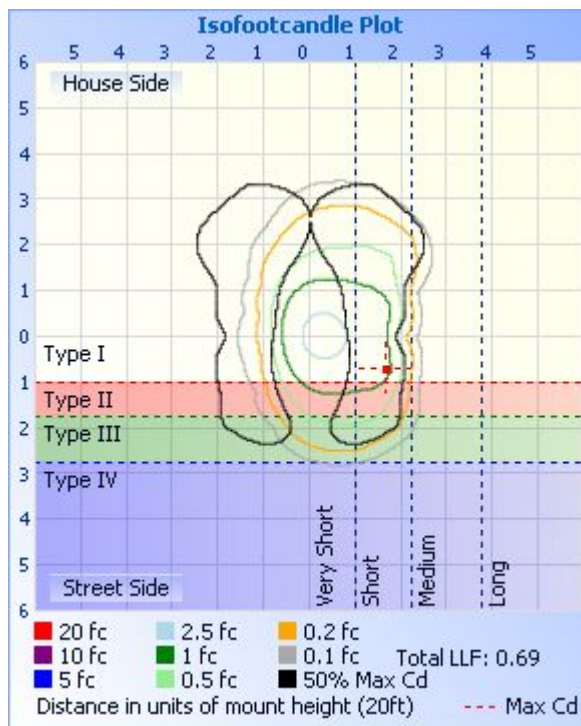
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ISOCANDELA DIAGRAM



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	1748	1749	1747	1729	1744	1746	1744	1748	1748	1749	1747	1729	1744	1746	1744	1748	1748
1	1743	1753	1759	1749	1766	1769	1763	1761	1753	1744	1733	1710	1721	1723	1724	1735	1743
2	1738	1758	1772	1767	1789	1791	1782	1774	1758	1739	1721	1690	1698	1700	1704	1721	1738
3	1733	1762	1785	1786	1813	1815	1801	1787	1762	1734	1708	1672	1675	1677	1684	1708	1733
4	1729	1767	1800	1808	1839	1840	1822	1799	1767	1729	1695	1653	1654	1654	1664	1694	1729
5	1725	1771	1815	1829	1866	1867	1843	1812	1772	1724	1682	1633	1632	1631	1645	1682	1725
6	1722	1776	1829	1853	1896	1895	1867	1826	1775	1717	1668	1615	1610	1609	1627	1670	1722
7	1720	1783	1846	1879	1927	1926	1889	1839	1777	1711	1653	1595	1588	1586	1611	1661	1720
8	1719	1790	1864	1907	1957	1955	1914	1853	1780	1705	1639	1576	1567	1564	1594	1651	1719
9	1719	1798	1883	1932	1986	1983	1938	1867	1782	1700	1624	1556	1545	1541	1578	1643	1719
10	1719	1807	1900	1958	2014	2012	1962	1881	1786	1695	1610	1537	1523	1520	1562	1635	1719
11	1720	1817	1919	1985	2046	2042	1984	1894	1790	1690	1596	1516	1501	1498	1547	1628	1720
12	1720	1826	1936	2012	2077	2069	2006	1907	1795	1685	1582	1497	1478	1479	1532	1621	1720
13	1721	1835	1956	2037	2108	2098	2029	1920	1802	1682	1570	1477	1455	1459	1517	1614	1721
14	1721	1845	1978	2062	2142	2129	2050	1935	1808	1680	1558	1457	1430	1437	1503	1607	1721
15	1722	1857	1998	2091	2177	2163	2072	1950	1816	1678	1547	1436	1406	1414	1489	1601	1722
16	1722	1868	2017	2121	2208	2195	2094	1965	1825	1677	1536	1414	1381	1392	1474	1594	1722
17	1723	1878	2037	2152	2241	2226	2117	1980	1835	1677	1526	1394	1354	1368	1458	1588	1723
18	1725	1889	2058	2179	2273	2256	2141	1997	1845	1678	1517	1371	1327	1343	1443	1583	1725
19	1728	1898	2081	2206	2304	2287	2166	2015	1854	1681	1507	1348	1298	1319	1428	1577	1728
20	1730	1907	2105	2233	2333	2318	2192	2033	1864	1683	1498	1325	1270	1294	1412	1572	1730
21	1734	1918	2128	2261	2365	2349	2217	2053	1875	1685	1486	1302	1241	1270	1395	1569	1734
22	1738	1928	2153	2287	2398	2380	2244	2070	1885	1688	1476	1279	1213	1245	1379	1564	1738
23	1743	1940	2175	2314	2435	2414	2270	2089	1896	1690	1465	1255	1183	1219	1362	1560	1743
24	1748	1952	2197	2343	2468	2448	2297	2108	1908	1694	1456	1231	1154	1192	1345	1556	1748
25	1752	1962	2218	2379	2504	2481	2327	2128	1919	1697	1445	1205	1125	1164	1327	1552	1752
26	1759	1974	2239	2409	2539	2515	2356	2147	1932	1700	1434	1180	1097	1136	1309	1546	1759
27	1766	1986	2260	2443	2573	2548	2387	2168	1944	1704	1423	1154	1068	1108	1290	1542	1766
28	1773	2001	2281	2473	2609	2583	2415	2189	1957	1708	1412	1128	1038	1080	1271	1535	1773
29	1782	2016	2300	2504	2644	2617	2444	2209	1970	1712	1400	1101	1009	1050	1251	1529	1782

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30	1789	2033	2318	2530	2676	2650	2475	2229	1983	1715	1386	1074	980	1021	1231	1522	1789
31	1796	2053	2336	2555	2703	2681	2505	2249	1997	1718	1373	1046	951	989	1208	1513	1796
32	1802	2071	2353	2582	2733	2708	2530	2270	2012	1722	1358	1019	921	957	1185	1504	1802
33	1805	2089	2379	2610	2764	2731	2553	2290	2028	1724	1343	991	889	925	1160	1494	1805
34	1803	2107	2404	2642	2800	2758	2575	2312	2044	1724	1327	962	857	894	1134	1483	1803
35	1801	2124	2438	2677	2839	2789	2597	2336	2060	1724	1310	932	824	861	1108	1473	1801
36	1802	2144	2476	2717	2880	2827	2620	2360	2075	1723	1292	903	789	829	1084	1464	1802
37	1807	2166	2508	2757	2917	2873	2649	2382	2090	1720	1274	873	754	796	1060	1455	1807
38	1814	2182	2540	2797	2952	2926	2686	2405	2103	1717	1255	841	718	762	1036	1447	1814
39	1822	2192	2572	2834	2981	2974	2731	2429	2113	1713	1236	809	684	727	1009	1438	1822
40	1833	2207	2604	2869	3010	3019	2776	2455	2123	1710	1217	776	651	693	981	1431	1833
41	1845	2226	2632	2907	3044	3061	2817	2486	2124	1709	1196	743	617	657	951	1423	1845
42	1858	2251	2663	2945	3086	3098	2853	2518	2130	1708	1176	709	582	623	919	1415	1858
43	1874	2277	2696	2986	3129	3139	2889	2548	2139	1708	1154	674	549	589	888	1408	1874
44	1892	2306	2732	3031	3186	3186	2922	2571	2154	1708	1132	639	518	558	854	1400	1892
45	1910	2337	2769	3085	3251	3236	2955	2588	2170	1708	1106	605	490	528	820	1392	1910
46	1930	2371	2810	3147	3320	3296	2989	2606	2188	1709	1081	573	468	500	787	1382	1930
47	1953	2406	2854	3218	3404	3356	3033	2627	2208	1713	1053	543	447	472	755	1374	1953
48	1978	2442	2906	3297	3498	3423	3078	2654	2230	1713	1024	515	429	450	725	1364	1978
49	2006	2480	2965	3384	3596	3502	3130	2684	2254	1715	991	490	415	431	698	1353	2006
50	2038	2518	3034	3490	3707	3599	3187	2720	2282	1715	957	468	403	413	669	1339	2038
51	2075	2560	3110	3613	3820	3707	3246	2757	2310	1715	924	448	393	398	643	1325	2075
52	2112	2606	3191	3755	3937	3836	3314	2796	2341	1713	891	430	385	385	618	1308	2112
53	2151	2653	3286	3919	4068	3986	3395	2841	2374	1712	860	414	378	373	595	1292	2151
54	2186	2707	3392	4109	4215	4152	3489	2888	2409	1708	829	399	372	364	571	1275	2186
55	2217	2767	3503	4328	4351	4331	3588	2942	2447	1704	799	386	370	356	546	1254	2217
56	2242	2832	3619	4584	4457	4521	3699	2997	2488	1697	770	374	382	354	522	1228	2242
57	2264	2900	3759	4861	4502	4732	3826	3054	2535	1690	742	365	392	367	497	1198	2264
58	2286	2982	3920	5203	4455	4959	3974	3124	2585	1678	713	365	383	372	469	1164	2286
59	2311	3074	4105	5626	4278	5237	4134	3198	2636	1669	681	371	374	358	441	1127	2311
60	2338	3170	4314	5925	3966	5490	4325	3278	2685	1657	650	370	368	345	427	1084	2338
61	2363	3270	4537	5963	3453	5582	4550	3360	2729	1643	618	355	363	335	421	1035	2363

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62	2378	3370	4771	5871	2747	5508	4804	3450	2764	1623	582	345	357	327	427	966	2378
63	2368	3461	4968	5615	2086	5245	5101	3557	2798	1595	542	337	352	321	405	897	2368
64	2326	3538	4955	5014	1577	4705	5453	3674	2834	1562	504	328	348	316	379	797	2326
65	2243	3571	4814	3866	1261	3686	5772	3796	2874	1521	470	325	346	312	360	718	2243
66	2117	3539	4548	2702	1075	2642	5926	3905	2915	1474	466	324	346	304	318	670	2117
67	1947	3413	4194	1928	890	1876	5890	4008	2952	1417	485	316	347	292	292	579	1947
68	1733	3169	3773	1435	766	1363	5732	4094	2979	1339	461	302	343	281	279	496	1733
69	1500	2805	3326	1143	677	1046	5503	4159	2989	1234	418	287	337	269	265	439	1500
70	1241	2362	2840	852	599	843	5190	4192	2961	1091	379	272	331	257	249	390	1241
71	957	1895	2317	690	525	714	4801	4137	2880	932	333	259	326	246	233	323	957
72	672	1481	1814	575	459	621	4275	3960	2745	773	302	247	322	238	216	234	672
73	497	1166	1379	487	402	548	3559	3648	2553	628	283	236	317	230	200	187	497
74	323	851	1014	418	351	488	2745	3242	2298	510	259	227	314	219	187	164	323
75	243	646	665	362	310	437	2033	2760	1986	423	238	216	310	205	174	146	243
76	192	491	469	317	276	393	1498	2245	1614	336	216	205	297	191	157	128	192
77	153	373	274	278	240	356	1118	1776	1224	283	196	190	282	176	137	110	153
78	119	264	205	244	205	324	739	1368	835	245	180	176	273	162	119	94	119
79	89	173	161	211	176	293	481	1041	566	209	166	161	269	147	105	81	89
80	65	115	129	180	146	259	329	767	402	174	152	146	265	132	90	67	65
81	46	82	102	145	118	225	250	560	295	146	136	131	256	118	74	56	46
82	33	63	78	112	96	173	199	412	222	123	119	117	241	101	60	46	33
83	24	50	57	89	78	129	160	263	168	105	103	103	222	80	45	37	24
84	18	39	41	69	55	106	128	172	125	88	88	86	189	60	29	27	18
85	12	29	24	42	22	85	101	114	89	73	75	65	152	42	17	17	12
86	6	17	10	16	6	53	76	87	64	58	64	47	109	27	9	9	6
87	3	7	5	5	4	18	57	70	47	46	51	32	81	11	4	4	3
88	3	4	2	4	3	4	38	57	34	38	38	20	36	3	3	4	3
89	3	4	2	1	2	3	23	41	25	31	25	8	4	2	3	4	3
90	4	3	1	1	2	2	11	27	18	23	16	6	2	2	4	5	4
91	4	3	2	1	2	2	5	15	12	15	10	6	2	2	4	5	4
92	4	3	2	1	2	2	2	7	8	10	8	6	1	2	5	6	4
93	5	4	2	1	2	2	2	4	6	9	8	7	1	2	5	6	5

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94	5	4	2	1	2	2	2	4	6	9	9	7	1	2	6	7	5
95	6	4	2	1	2	2	2	4	6	9	9	8	1	3	7	8	6
96	6	4	2	1	2	2	2	4	6	10	9	9	1	4	7	8	6
97	6	5	2	1	2	2	2	4	7	10	10	9	2	4	8	9	6
98	7	5	2	1	2	2	2	4	7	10	10	10	2	5	9	10	7
99	7	5	2	2	2	2	2	4	7	11	11	10	2	6	10	10	7
100	8	6	2	2	2	2	2	4	7	11	11	11	3	7	11	11	8
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106	10	7	3	2	3	2	3	6	9	14	15	14	8	11	14	14	10
107	11	8	3	2	3	3	3	6	9	15	15	15	8	12	15	14	11
108	11	8	3	2	3	3	3	6	10	15	16	15	9	13	15	15	11
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112	13	9	4	3	3	3	4	7	11	17	17	18	13	15	16	16	13
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126	15	12	6	4	5	5	6	10	13	19	21	22	19	19	19	19	15
127	15	12	6	4	6	5	6	10	13	19	21	22	20	19	19	19	15
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158	13	13	10	9	9	10	10	12	11	13	14	15	18	18	16	15	13
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Test Voltage:277V

Electrical Measurement:

Sample No.	Voltage (Vac)	Frequency (Hz)	Current (A)	Power (W)	Power Factor	THD %
GZE150406 -M1	277.0	60	0.3806	98.01	0.9297	

Goniophotometer Method:

Parameter	Result
Test Voltage (V)	277.0
Frequency (Hz)	60
Total Luminous (lm)	9310.6
Luminous Efficacy (lm/W)	95.00
Beam Angle°	95.4
Center Beam Candle Power (cd)	5960
S/MH(C0/180)	0.90
S/MH(C90/270)	1.59

2.2 Electrical, Photometric and Chromaticity Measurements (Refer to Work Instruction QD25)	IES LM-79 2008
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Test date	2015-04-21	Test Ambient:	25.2 ° C
Test Orientation	As intended	Stabilization Time (min)	90
Model Number	83512		

Electrical Measurement:

Sample No.	Voltage (Vac)	Frequency (Hz)	Current (A)	Power (W)	Power Factor	THD %
GZE150406	120.0	60	0.8172	97.53	0.9945	7.51
-M2	277.0	60	0.3824	97.82	0.9235	13.24

Sphere-Spectroradiometer Method:

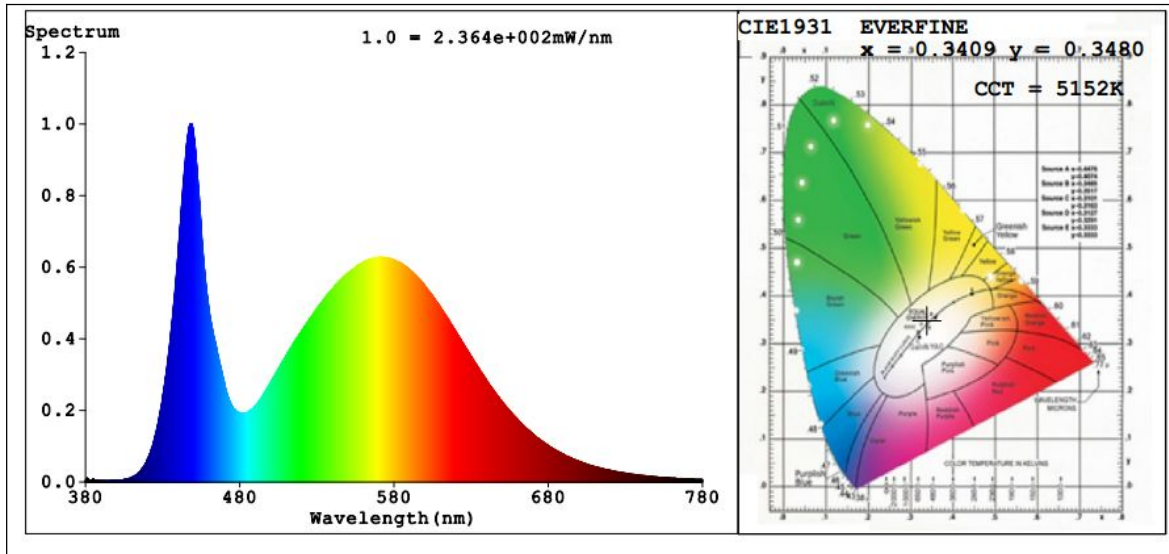
Parameter	Result
Test Voltage (V)	120.0
Frequency (Hz)	60
Color Rendering Index (CRI)	75.0
R9	0
CCT (K)	5152
Chromaticity (x, y)	x=0.3409 y=0.3480
Chromaticity (u', v')	u'=0.2100 v'=0.4823
Duv	-0.0001
Total Luminous (lm)	9780
Luminous Efficacy (lm/W)	100.28

Special Color Rendering Indices			
R1	72	R9	0
R2	81	R10	53
R3	86	R11	71
R4	75	R12	52
R5	74	R13	73
R6	73	R14	92
R7	82	R15	67
R8	58	--	--

Sphere-Spectroradiometer Method for Bare Lamp(277V):

Parameter	Result
Test Voltage (V)	277.0
Frequency (Hz)	60
Total Initial Lumen Output(lm)	9778
Initial Lumen Efficacy(lm/w)	99.96

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	2014-07-01	2015-06-30
ST-R-331	Spectral analysis system HAAS-2000	2014-07-01	2015-06-30
D204	Standard Lamp	2014-07-01	2015-06-30
PF2010	Power Meter for Integrating Sphere	2014-07-01	2015-06-30
EE-09	Goniophotometer system	2014-07-01	2015-06-30
D908S	Standard Lamp	2014-07-01	2015-06-30
PF210	Power Meter for Goniophotometer	2014-07-01	2015-06-30
ST-R-181A	Temperature Tester	2014-07-01	2015-06-30
Uncertainty Photometric Measurement (Sphere):1.74% Chromaticity Measurement(Sphere):14.3K Photometric Measurement(Goniophotometer):1.62%			

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