



Report No.: GZE150818-Y2

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): 83381

Representative (Tested) Model: 83381

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

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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	Sep.09,2015
Test Report No.	GZE150818-Y2
Laboratory Contact Name	Tommy Liang

Product Information:

Organization Name	Premium Quality Lighting	
Brand Name	Superior Life®	
Model Number	83381	
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	--	62.31	W
Input Current	--	0.5308	A
Input Voltage (ac)	--	120.0	V
Power Factor	--	0.9782	
Off-State Power	--	0	W

Photometric Characteristics

Total Initial Lumen Output	--	8247.1	lm
Initial Lumen Efficacy	--	132.36	lm/w
Correlated color temperature / CCT	5028	--	K
Color rendering index / CRI	75.3	--	
R9 Value	0	--	
Duv	0.0032	--	
Luminous Intensity Distribution			
Center beam candlepower (if applicable)		2918	cd
Beam angle (if applicable)		114.0	°
Zonal lumens in the 0°-60° zone		81.6	%
Zonal lumens in the 60°-90° zone	-----	18.2	%
Zonal lumens in the 90°-120° zone		0	%
Zonal lumens in the 120°-180° zone		0.2	%

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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 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.

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1. Product Information:

Brand Name	Superior Life®
Model Number	83381
Luminaire Type	Retrofit Kits for Outdoor Pole/Arm-mounted Area and Roadway Luminaires
Rated Voltage / Frequency	100~ 277V, 50/60 Hz
Nominal Power	60W
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-Y21(5000K)

Photo



2.1 Electrical, Photometric and Chromaticity Measurements (Refer to Work Instruction QD25)	IES LM-79 2008
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Test date	2015-08-30	Test Ambient:	25.2 °C
Test Orientation	As intended	Stabilization Time (min)	90
Model Number	83381		

Electrical Measurement:

Sample No.	Voltage (Vac)	Frequency (Hz)	Current (A)	Power (W)	Power Factor	THD %
GZE150818	120.0	60	0.5308	62.31	0.9782	7.99
-Y21	277.0	60	0.2513	62.78	0.9018	10.32

Sphere-Spectroradiometer Method in GE M250R2 Roadway Lamp:

Parameter	Result	Special Color Rendering Indices			
Test Voltage (V)	120.0	R1	73	R9	0
Frequency (Hz)	60	R2	81	R10	52
Color Rendering Index (CRI)	75.3	R3	85	R11	71
R9	0	R4	75	R12	44
CCT (K)	5028	R5	73	R13	74
Chromaticity (x, y)	x=0.3449 y=0.3579	R6	72	R14	91
Chromaticity (u', v')	u'=0.2089 v'=0.4877	R7	84	R15	68
Duv	0.0032	R8	60	--	--

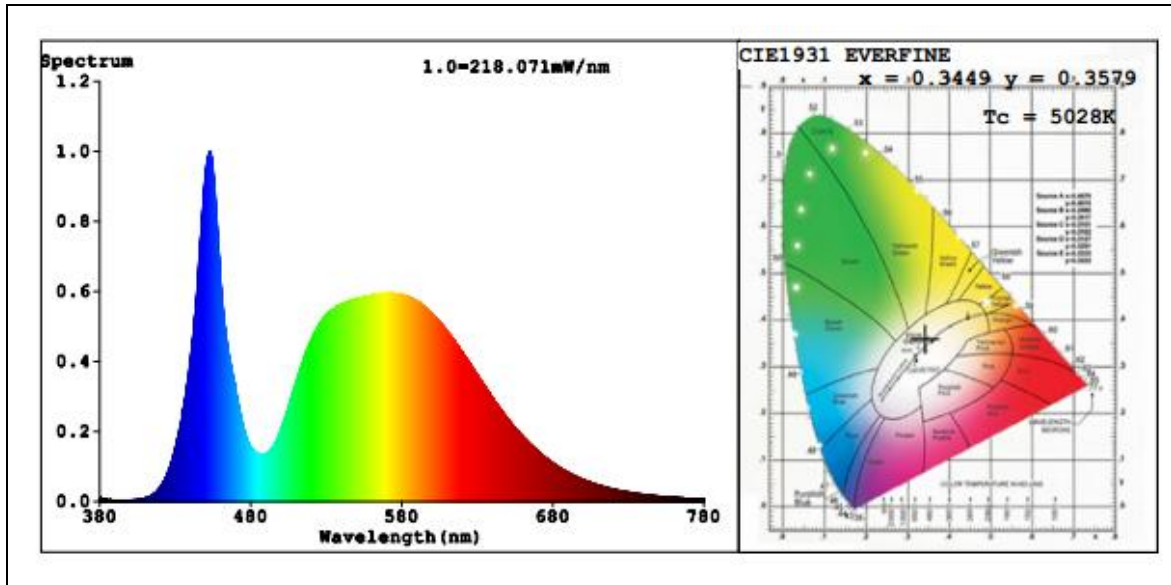
Goniophotometer Method in GE M250R2 Roadway Lamp:

Parameter	Result
Test Voltage (V)	120.0
Frequency (Hz)	60
Total Luminous (lm)	8247.1
Luminous Efficacy (lm/W)	132.36
Beam Angle °	114.0
Center Beam Candle Power (cd)	2918

Goniophotometer Method in GE M250R2 Roadway Lamp:

Parameter	Result
Test Voltage (V)	277.0
Frequency (Hz)	60
Total Luminous (lm)	8262.0
Luminous Efficacy (lm/W)	131.60

Spectral Power Distribution & Chromaticity Diagram



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Zonal Lumen Tabulation

Zonal Lumen Summary		
Zone	Lumens	% Luminaire
0-30	2,289.6	27.8%
0-40	3,778.1	45.8%
0-60	6,730.6	81.6%
60-90	1,500.7	18.2%
70-100	505.9	6.1%
90-120	3.9	0%
0-90	8,231.3	99.8%
90-180	14.9	0.2%
0-180	8,246.2	100%

Lumens Per Zone					
Zone	Lumens	% Total	Zone	Lumens	% Total
0-10	276.5	3.4%	90-100	0.7	0%
10-20	795.5	9.6%	100-110	1.8	0%
20-30	1,217.5	14.8%	110-120	1.5	0%
30-40	1,488.5	18.1%	120-130	2.1	0%
40-50	1,558.4	18.9%	130-140	2.4	0%
50-60	1,394.1	16.9%	140-150	2.4	0%
60-70	995.5	12.1%	150-160	2.1	0%
70-80	450.9	5.5%	160-170	1.4	0%
80-90	54.3	0.7%	170-180	0.5	0%

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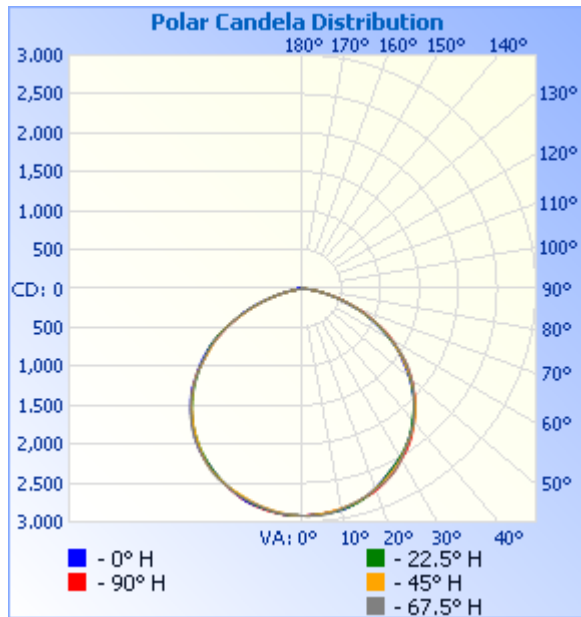
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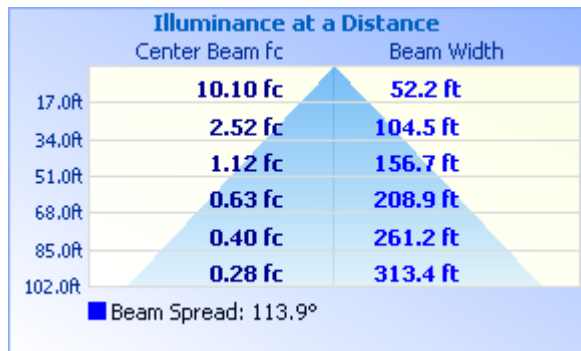
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Photometric Data



Illuminance Plots



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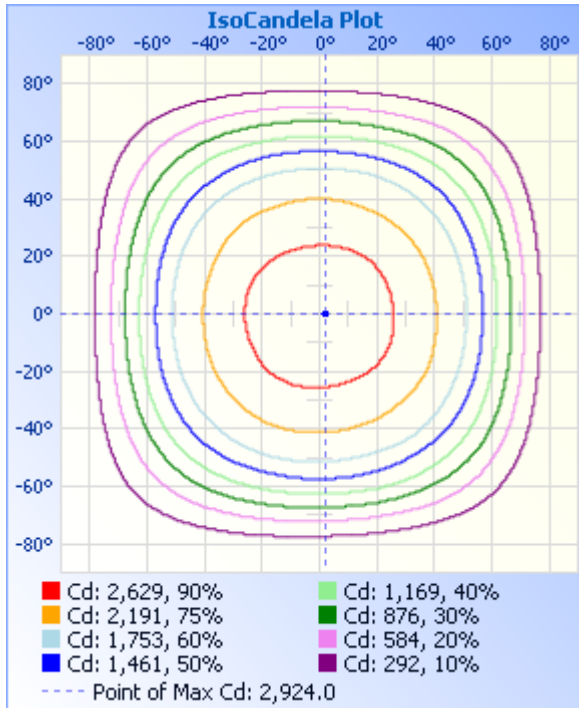
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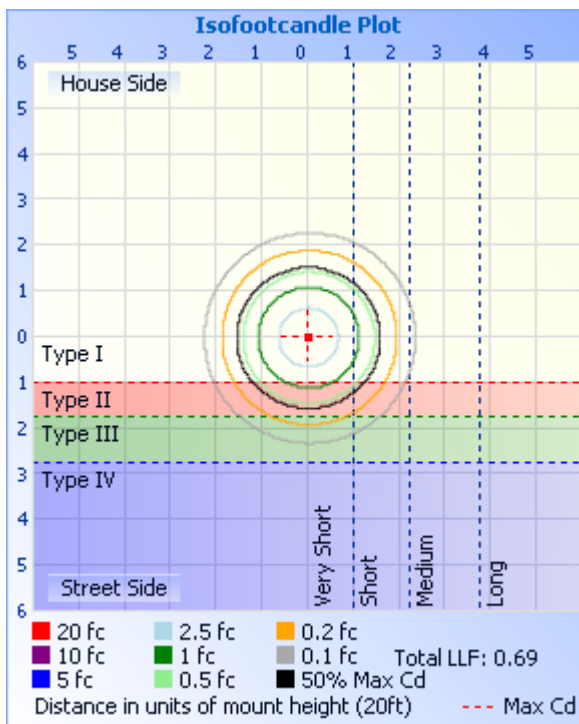
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ISOCANDELA DIAGRAM



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	2918	2918	2918	2918	2918	2918	2918	2918	2918	2918	2918	2918	2918	2918	2918	2918	2918
1	2918	2918	2919	2923	2916	2919	2918	2919	2917	2916	2915	2914	2921	2917	2918	2920	2918
2	2916	2917	2917	2924	2911	2917	2916	2921	2915	2916	2913	2910	2922	2916	2917	2922	2916
3	2912	2915	2913	2924	2910	2913	2915	2920	2914	2914	2909	2909	2921	2916	2917	2922	2912
4	2909	2911	2909	2923	2908	2908	2910	2918	2912	2912	2904	2906	2917	2915	2916	2922	2909
5	2907	2908	2903	2921	2904	2903	2906	2915	2909	2907	2897	2903	2911	2913	2914	2919	2907
6	2903	2904	2897	2916	2898	2898	2903	2910	2901	2900	2890	2899	2906	2912	2909	2915	2903
7	2901	2901	2890	2908	2892	2892	2898	2903	2892	2893	2882	2892	2900	2908	2902	2909	2901
8	2897	2897	2882	2898	2887	2887	2891	2896	2882	2885	2871	2883	2895	2902	2894	2902	2897
9	2894	2891	2875	2887	2882	2879	2882	2888	2873	2875	2862	2872	2888	2894	2885	2891	2894
10	2888	2884	2866	2874	2874	2872	2871	2878	2867	2866	2853	2862	2879	2883	2874	2881	2888
11	2879	2876	2858	2860	2865	2864	2858	2867	2861	2857	2843	2850	2869	2871	2863	2871	2879
12	2868	2865	2849	2849	2855	2856	2847	2857	2853	2848	2831	2839	2860	2859	2854	2862	2868
13	2855	2855	2841	2837	2843	2847	2837	2847	2847	2838	2816	2829	2849	2848	2842	2853	2855
14	2841	2845	2830	2825	2833	2835	2826	2835	2837	2824	2803	2818	2837	2834	2830	2842	2841
15	2825	2833	2818	2814	2821	2823	2814	2821	2824	2807	2790	2807	2824	2821	2817	2828	2825
16	2808	2817	2803	2802	2808	2810	2802	2807	2808	2789	2777	2798	2810	2806	2803	2812	2808
17	2788	2798	2788	2791	2796	2796	2788	2794	2790	2773	2763	2786	2794	2788	2791	2795	2788
18	2770	2779	2772	2776	2786	2782	2772	2782	2771	2758	2749	2772	2776	2769	2776	2779	2770
19	2750	2757	2754	2760	2775	2768	2758	2765	2751	2744	2737	2755	2759	2750	2759	2761	2750
20	2727	2734	2737	2743	2761	2756	2742	2749	2731	2728	2725	2736	2738	2731	2741	2740	2727
21	2705	2712	2718	2729	2744	2739	2724	2732	2711	2710	2712	2718	2716	2715	2723	2718	2705
22	2682	2690	2700	2716	2725	2722	2707	2715	2694	2691	2696	2702	2695	2696	2703	2693	2682
23	2658	2666	2681	2702	2706	2701	2691	2696	2675	2671	2678	2686	2675	2676	2682	2670	2658
24	2636	2640	2661	2684	2686	2681	2675	2677	2655	2651	2661	2673	2655	2656	2660	2647	2636
25	2613	2615	2639	2664	2665	2658	2658	2656	2633	2631	2643	2656	2636	2636	2637	2623	2613
26	2591	2592	2617	2645	2643	2634	2638	2632	2609	2607	2625	2635	2616	2617	2613	2597	2591
27	2568	2569	2595	2620	2620	2607	2614	2608	2584	2582	2604	2610	2595	2597	2590	2574	2568
28	2546	2546	2573	2594	2594	2578	2589	2585	2561	2558	2581	2583	2572	2573	2567	2550	2546
29	2525	2524	2549	2564	2565	2551	2564	2561	2538	2533	2556	2556	2549	2547	2539	2525	2525

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30	2504	2501	2522	2532	2538	2525	2536	2536	2518	2506	2525	2532	2526	2519	2511	2499	2504
31	2481	2477	2493	2502	2512	2499	2506	2511	2496	2480	2496	2505	2499	2491	2483	2475	2481
32	2457	2450	2464	2470	2487	2476	2480	2481	2474	2454	2464	2478	2472	2462	2455	2449	2457
33	2430	2424	2436	2439	2461	2454	2453	2452	2448	2426	2432	2451	2442	2433	2426	2420	2430
34	2399	2399	2409	2410	2434	2434	2425	2421	2419	2395	2401	2423	2412	2403	2394	2390	2399
35	2369	2372	2381	2380	2403	2410	2398	2392	2390	2365	2369	2394	2381	2372	2364	2362	2369
36	2342	2340	2353	2350	2372	2381	2368	2362	2357	2335	2335	2364	2347	2342	2332	2328	2342
37	2312	2306	2325	2319	2336	2349	2334	2333	2324	2305	2303	2333	2312	2308	2298	2293	2312
38	2281	2269	2296	2287	2299	2314	2299	2304	2289	2273	2271	2300	2277	2275	2260	2256	2281
39	2247	2234	2265	2254	2264	2274	2264	2272	2255	2240	2238	2264	2242	2240	2223	2219	2247
40	2212	2198	2231	2220	2227	2232	2229	2237	2218	2205	2203	2228	2206	2205	2188	2184	2212
41	2176	2163	2199	2183	2191	2190	2195	2202	2183	2168	2167	2191	2170	2166	2151	2146	2176
42	2140	2130	2164	2143	2153	2149	2155	2163	2147	2130	2128	2153	2134	2127	2116	2106	2140
43	2101	2095	2125	2104	2116	2109	2115	2121	2109	2090	2091	2113	2099	2088	2079	2067	2101
44	2061	2058	2084	2066	2080	2070	2075	2080	2070	2048	2054	2073	2062	2050	2038	2028	2061
45	2021	2017	2040	2029	2042	2036	2037	2039	2033	2004	2015	2031	2023	2014	1993	1988	2021
46	1979	1978	1997	1992	2004	2000	2001	1995	1994	1961	1975	1986	1984	1974	1951	1947	1979
47	1934	1938	1954	1953	1962	1961	1959	1950	1950	1919	1931	1938	1941	1932	1911	1912	1934
48	1890	1897	1911	1915	1918	1920	1913	1905	1907	1875	1889	1891	1894	1885	1875	1874	1890
49	1843	1854	1866	1873	1875	1875	1862	1861	1859	1828	1846	1840	1846	1837	1835	1838	1843
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51	1750	1761	1770	1787	1787	1775	1762	1773	1754	1732	1750	1736	1746	1747	1743	1764	1750
52	1698	1716	1718	1744	1743	1729	1714	1726	1707	1686	1695	1686	1693	1702	1699	1725	1698
53	1647	1675	1670	1699	1698	1685	1666	1673	1661	1640	1637	1639	1636	1656	1654	1682	1647
54	1598	1631	1621	1654	1648	1640	1615	1615	1616	1588	1577	1587	1581	1607	1611	1626	1598
55	1553	1580	1572	1603	1596	1586	1568	1554	1566	1534	1516	1535	1529	1556	1563	1568	1553
56	1509	1526	1522	1551	1543	1536	1522	1496	1513	1488	1461	1483	1483	1502	1510	1511	1509
57	1461	1474	1471	1499	1487	1484	1475	1454	1462	1444	1415	1432	1432	1448	1453	1457	1461
58	1410	1418	1419	1443	1436	1434	1419	1415	1411	1401	1369	1382	1378	1394	1395	1405	1410
59	1357	1360	1371	1387	1381	1384	1364	1368	1359	1350	1322	1326	1319	1337	1344	1348	1357
60	1301	1302	1317	1331	1334	1338	1314	1307	1301	1298	1272	1267	1261	1277	1291	1291	1301
61	1241	1242	1265	1276	1288	1287	1262	1247	1239	1244	1217	1208	1199	1217	1231	1232	1241

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62	1181	1184	1213	1220	1241	1229	1209	1194	1174	1184	1160	1151	1140	1155	1172	1178	1181
63	1123	1131	1158	1161	1188	1176	1157	1139	1111	1110	1104	1095	1083	1092	1109	1123	1123
64	1062	1079	1100	1107	1122	1122	1098	1078	1052	1037	1046	1036	1022	1036	1050	1063	1062
65	1008	1023	1043	1049	1057	1064	1038	1018	984	975	983	979	962	976	984	994	1008
66	958	964	986	991	995	1002	975	954	917	921	907	920	904	918	922	935	958
67	903	909	923	935	938	933	913	890	860	860	832	855	839	857	871	879	903
68	845	854	860	877	886	861	855	824	811	795	773	791	775	793	813	822	845
69	785	800	800	811	830	799	797	762	752	727	715	722	719	728	745	772	785
70	721	740	742	754	770	745	732	705	689	670	656	658	661	669	685	718	721
71	658	676	687	699	699	689	674	650	633	609	598	594	594	610	634	649	658
72	603	621	632	639	640	630	611	599	569	541	540	534	535	553	575	590	603
73	548	572	574	585	585	575	552	540	508	485	478	474	476	498	519	534	548
74	502	515	519	526	536	517	494	476	450	431	420	417	423	440	459	478	502
75	446	456	465	471	477	460	444	418	393	371	368	364	366	382	402	423	446
76	390	402	410	423	419	410	390	366	339	322	309	311	318	333	348	378	390
77	348	351	364	370	371	358	337	318	286	272	262	260	270	285	300	326	348
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79	250	261	267	274	274	266	243	222	192	180	171	171	179	195	212	235	250
80	210	218	224	232	231	218	199	176	143	134	123	125	138	158	172	193	210
81	174	183	188	190	190	170	150	124	96	88	81	83	97	123	139	158	174
82	140	148	151	156	150	119	101	76	55	51	47	49	62	90	108	125	140
83	108	117	121	122	105	77	58	40	28	26	25	26	36	60	82	96	108
84	72	86	92	87	68	43	27	18	13	13	14	17	20	37	59	65	72
85	38	51	67	57	39	21	14	9	6	6	7	11	14	21	38	35	38
86	20	23	43	33	21	12	6	2	1	1	1	3	9	14	21	17	20
87	10	12	19	18	12	5	2	1	1	0	1	1	2	9	11	9	10
88	3	4	8	10	5	1	0	1	0	0	1	1	0	1	4	2	3
89	1	1	1	1	1	0	0	0	0	0	1	1	0	0	1	1	1
90	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0
91	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0
92	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
93	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0

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94	0	0	0	0	0	0	0	1	1	1	0	0	0	0	0	0
95	0	0	0	0	0	0	0	1	1	1	0	0	0	0	0	0
96	0	0	0	0	0	0	0	1	1	1	0	0	0	0	0	0
97	0	0	0	0	0	0	1	1	1	1	0	0	0	0	0	0
98	0	0	0	0	0	0	0	1	8	1	1	0	0	0	0	0
99	0	0	0	0	0	0	1	1	29	1	1	1	0	0	0	0
100	0	0	0	0	0	0	1	1	57	1	1	1	0	0	0	0
101	0	0	0	0	0	1	1	1	57	1	1	1	0	0	0	0
102	0	0	0	0	1	1	1	1	47	1	1	1	0	0	0	0
103	0	0	0	0	1	1	1	1	25	1	1	1	0	0	0	0
104	0	0	0	0	1	1	1	1	5	1	1	1	0	1	0	0
105	0	0	0	0	1	1	1	1	1	1	1	1	0	0	0	0
106	0	0	0	0	1	1	1	1	1	1	1	1	1	1	0	0
107	0	0	1	0	1	1	1	1	1	1	1	1	1	1	1	0
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113	1	1	1	1	2	2	2	2	2	2	2	2	1	1	1	1
114	1	1	1	1	2	2	2	2	2	2	2	2	1	1	1	1
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116	1	1	1	1	2	2	2	2	2	2	2	2	2	2	1	1
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122	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
123	3	2	2	2	2	2	2	2	2	2	2	2	2	2	2	3
124	3	2	2	2	2	2	2	2	2	2	2	2	2	2	2	3
125	3	2	2	2	3	2	2	2	3	2	2	2	2	2	2	3

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126	3	2	2	2	2	3	2	2	3	3	2	2	2	2	3	3	
127	3	3	2	2	3	3	2	2	3	3	3	3	2	2	2	3	3
128	3	3	2	2	3	3	2	2	3	3	3	3	3	2	2	3	3
129	3	3	2	2	3	3	3	2	3	3	3	3	3	2	2	3	3
130	3	3	2	2	3	3	3	3	3	3	3	3	3	3	2	3	3
131	3	3	2	3	3	3	3	3	3	3	3	3	3	3	2	3	3
132	3	3	3	3	3	3	3	3	3	3	3	3	3	3	2	3	3
133	3	3	3	3	3	3	3	3	3	3	3	3	3	3	2	3	3
134	3	3	3	3	3	3	3	4	3	4	3	3	3	3	2	3	3
135	3	3	3	3	4	3	3	4	3	4	3	3	3	3	2	3	3
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143	3	4	3	3	4	4	4	4	4	4	4	4	3	3	3	4	3
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147	4	4	3	3	5	4	4	5	4	4	4	5	4	3	3	4	4
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149	4	4	4	3	5	5	4	5	4	4	5	5	4	3	3	4	4
150	4	4	4	3	5	5	5	5	4	4	5	5	4	3	3	5	4
151	4	4	4	3	5	5	5	5	4	4	5	5	4	3	4	6	4
152	4	4	4	3	5	5	5	5	4	4	5	5	4	3	4	6	4
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154	5	4	4	4	5	5	5	5	4	4	5	5	4	3	4	5	5
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156	5	4	4	4	5	5	5	5	5	4	5	5	4	4	4	5	5
157	5	4	4	4	5	5	5	5	5	4	5	5	4	4	4	5	5

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

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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 *******