



Report No.: GZE160347-W-R

NVLAP LAB CODE 201011-0

LM-79-08 Test Report

For

LIGHT EFFICIENT DESIGN

(Brand Name:N/A)

188 S. Northwest Highway Cary, IL 60013

LED Luminaire

Model name(s): LED-8050M50-HV

Representative (Tested) Model: LED-8050M50-HV

Model Different :N/A

Test & Report By:

Jack Luo

Engineer: Jack Luo

Date: Apr.28,2016

Update:Mar.26,2018

Review By:

Univ Xie

Manager: Univ Xie

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: 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	Apr.28,2016
Test Report No.	GZE160347-W
Laboratory Contact Name	Tommy Liang

Product Information:

Organization Name	LIGHT EFFICIENT DESIGN		
Brand Name	N/A		
Model Number	LED-8050M50-HV		
SKU (if available)	N/A		
Type of Luminaire (for integral lamps, list base type and lamp type)	LED Luminaire		
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	--	297.9	W
Input Current	--	1.097	A
Input Voltage (ac)	--	277.0	V
Power Factor	--	0.9804	
Off-State Power	--	0	W

Photometric Characteristics

Total Initial Lumen Output	--	33533	lm
Initial Lumen Efficacy	--	112.58	lm/w
Correlated color temperature / CCT	4886	--	K
Color rendering index / CRI	71.6	--	
R9 Value	0	--	
Duv	0.0026	--	
Luminous Intensity Distribution			
Center beam candlepower (if applicable)		5491	cd
Beam angle (if applicable)		115.3	°
Zonal lumens in the 0°-60° zone		75.6	%
Zonal lumens in the 60°-90° zone	-----	21.6	%
Zonal lumens in the 90°-120° zone		2	%
Zonal lumens in the 120°-180° zone		0.7	%

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Test Specifications:	
Date of Receipt	: Apr.01,2016
Date of Test	: Apr.30,2016
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 277 Volts, 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 277 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	N/A
Model Number	LED-8050M50-HV
Luminaire Type	LED Luminaire
Rated Voltage / Frequency	277~480 Vac, 50/60Hz
Nominal Power	300W
Rated Initial Lamp Lumen	--
Declared CCT	5000K
LED Manufacturer	CREE
LED Model	XTEAWT-00-0000-000000GE3
Sample Receipt Date	Apr.01,2016
Sample Number	GZE160347-W(5000K)

Photo



2.1 Electrical, Photometric and Chromaticity Measurements (Refer to Work Instruction QD25)	IES LM-79 2008
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Test date	2016-04-30	Test Ambient:	25.2 °C
Test Orientation	As intended	Stabilization Time (min)	90
Model Number	LED-8050M50-HV		

Electrical Measurement:

Sample No.	Voltage (Vac)	Frequency (Hz)	Current (A)	Power (W)	Power Factor	THD %
GZE160347	277.0	60	1.097	297.9	0.9804	7.41
-W1	480.0	60	0.6380	293.4	0.9580	11.60

Sphere-Spectroradiometer Method:

Parameter	Result
Test Voltage (V)	277.0
Frequency (Hz)	60
Color Rendering Index (CRI)	71.6
R9	0
CCT (K)	4886
Chromaticity (x, y)	x=0.3490 y=0.3600
Chromaticity (u', v')	u'=0.2108 v'=0.4893
Duv	0.0026

Special Color Rendering Indices			
R1	70	R9	0
R2	75	R10	40
R3	77	R11	71
R4	73	R12	41
R5	70	R13	70
R6	65	R14	87
R7	80	R15	66
R8	61	--	--

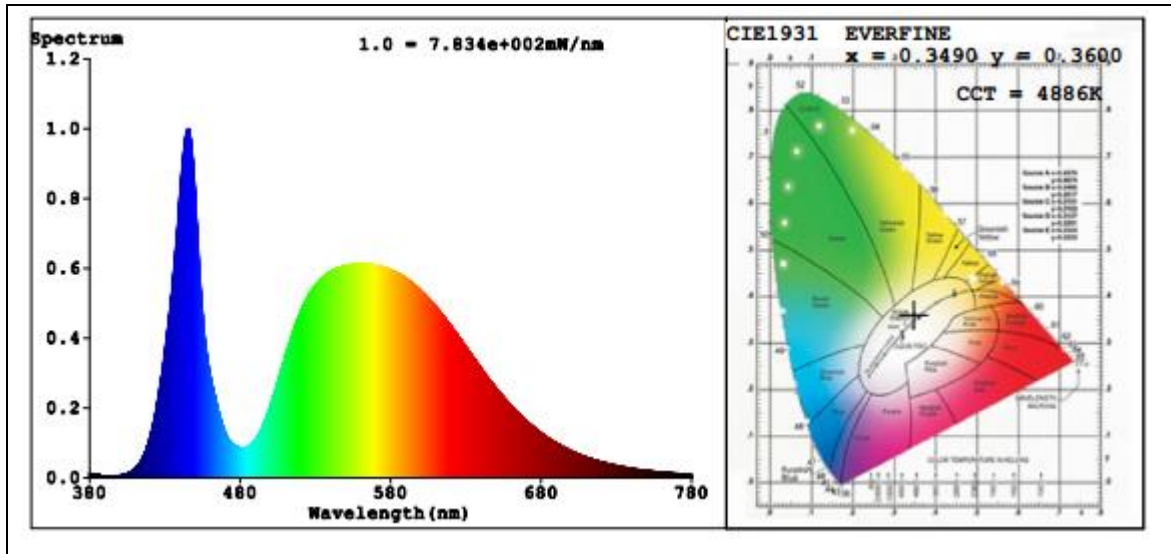
Goniophotometer Method :

Parameter	Result
Test Voltage (V)	277.0
Frequency (Hz)	60
Total Luminous (lm)	33533
Luminous Efficacy (lm/W)	112.58
Beam Angle °	115.3
Center Beam Candle Power (cd)	5491

Goniophotometer Methodn :

Parameter	Result
Test Voltage (V)	480.0
Frequency (Hz)	60
Total Luminous (lm)	33241
Luminous Efficacy (lm/W)	113.29

Spectral Power Distribution & Chromaticity Diagram



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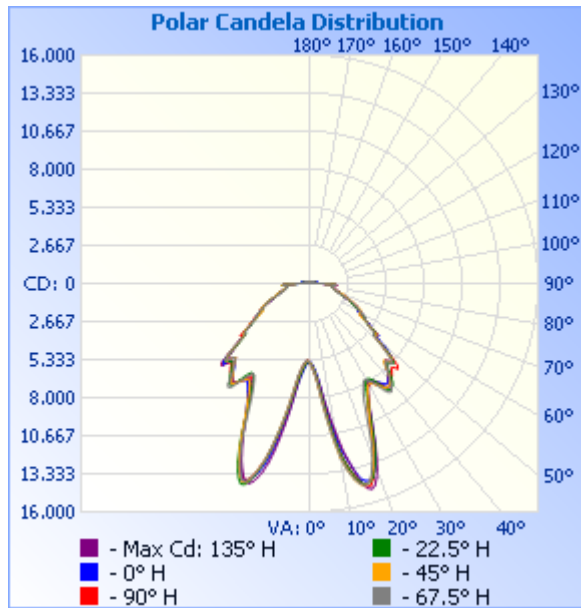
Tel: 8620-3229 0320 Fax: 8620-32290422 <http://www.standard-tech.com>

Zonal Lumen Tabulation

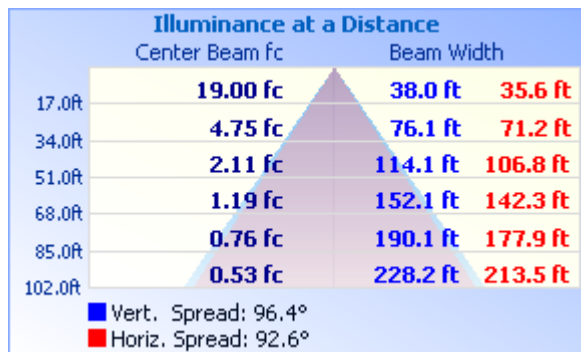
Zonal Lumen Summary		
Zone	Lumens	% Luminaire
0-30	9,363.5	27.9%
0-40	14,688.7	43.8%
0-60	25,359.4	75.6%
60-90	7,256.2	21.6%
70-100	4,179.5	12.5%
90-120	663.8	2%
0-90	32,615.6	97.3%
90-180	915.8	2.7%
0-180	33,531.4	100%

Lumens Per Zone					
Zone	Lumens	% Total	Zone	Lumens	% Total
0-10	755.3	2.3%	90-100	261.1	0.8%
10-20	3,844.5	11.5%	100-110	212.5	0.6%
20-30	4,763.7	14.2%	110-120	190.2	0.6%
30-40	5,325.1	15.9%	120-130	121.3	0.4%
40-50	6,063.0	18.1%	130-140	68.3	0.2%
50-60	4,607.8	13.7%	140-150	34.0	0.1%
60-70	3,337.9	10.0%	150-160	17.5	0.1%
70-80	2,135.5	6.4%	160-170	8.0	0%
80-90	1,782.9	5.3%	170-180	2.9	0%

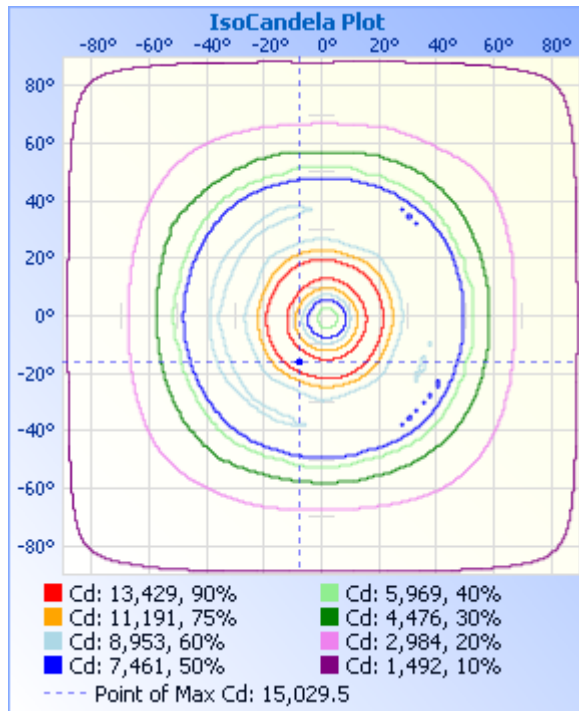
Photometric Data



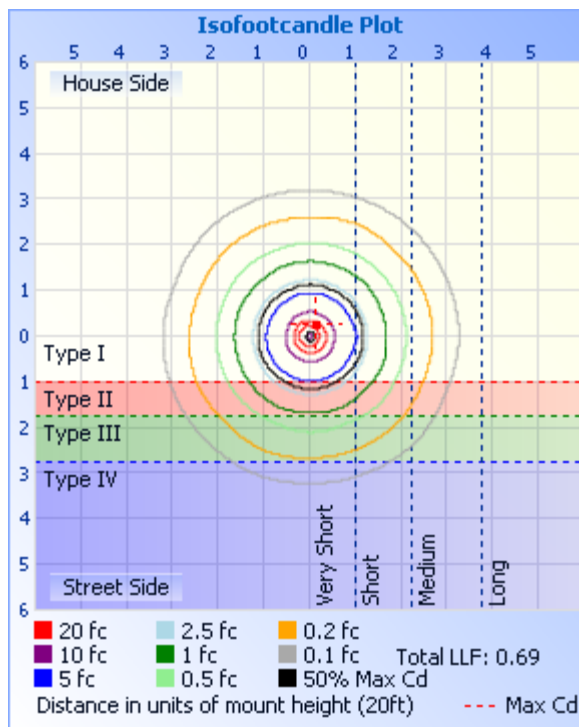
Illuminance Plots



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	5491	5491	5491	5491	5491	5491	5491	5491	5491	5491	5491	5491	5491	5491	5491	5491	5491
1	5550	5614	5658	5681	5679	5659	5622	5564	5500	5459	5419	5382	5385	5410	5441	5492	5550
2	5722	5823	5913	5957	5934	5886	5815	5722	5606	5514	5432	5373	5385	5421	5492	5592	5722
3	5949	6105	6230	6270	6230	6169	6080	5957	5805	5651	5519	5446	5468	5532	5625	5779	5949
4	6242	6490	6673	6703	6617	6524	6396	6265	6069	5868	5693	5616	5636	5718	5828	6019	6242
5	6688	7091	7325	7386	7202	7017	6791	6621	6388	6160	5942	5830	5866	5972	6108	6335	6688
6	7411	7892	8248	8329	8009	7728	7357	7097	6751	6493	6232	6127	6173	6325	6549	6902	7411
7	8263	8836	9206	9321	8925	8527	8116	7778	7271	6929	6628	6484	6649	6887	7250	7703	8263
8	9175	9827	10266	10298	9834	9394	8936	8599	8067	7538	7267	7162	7378	7702	8131	8575	9175
9	10152	10849	11333	11286	10815	10271	9799	9442	8889	8331	8081	8042	8236	8611	9080	9526	10152
10	11161	11846	12322	12245	11812	11208	10686	10304	9720	9189	8961	8962	9169	9578	10045	10523	11161
11	11970	12596	13033	13044	12588	12061	11628	11199	10603	10077	9873	9877	10084	10546	11057	11565	11970
12	12562	13228	13608	13637	13236	12796	12444	12151	11537	10948	10817	10787	10985	11564	12083	12367	12562
13	13192	13774	14106	14069	13751	13495	13187	12990	12419	11882	11760	11710	11817	12432	12868	13026	13192
14	13779	14201	14452	14394	14242	14087	13924	13661	13056	12677	12551	12555	12601	13138	13547	13661	13779
15	14216	14501	14617	14608	14659	14542	14523	14278	13598	13392	13231	13243	13223	13747	14041	14143	14216
16	14374	14584	14602	14620	14820	14819	14912	14674	14012	13979	13846	13810	13801	14248	14421	14374	14374
17	14415	14528	14476	14468	14739	14860	15030	14944	14387	14433	14310	14244	14241	14553	14638	14406	14415
18	14253	14311	14144	14004	14386	14537	14828	14913	14597	14786	14620	14560	14454	14553	14543	14239	14253
19	13897	13904	13674	13446	13834	13999	14414	14459	14515	14826	14625	14562	14384	14221	14252	13849	13897
20	13411	13429	13056	12827	13151	13317	13804	13868	14120	14535	14269	14175	14021	13823	13822	13327	13411
21	12892	12813	12397	12133	12463	12513	13115	13143	13570	14049	13790	13576	13540	13342	13301	12740	12892
22	12227	12139	11714	11237	11696	11736	12348	12399	12947	13401	13226	12898	12988	12747	12689	12016	12227
23	11491	11351	10963	10359	10931	10910	11527	11595	12256	12638	12477	12166	12382	12075	12051	11261	11491
24	10707	10576	10299	9642	10292	10229	10773	10714	11479	11814	11727	11325	11678	11379	11389	10497	10707
25	10008	9931	9778	9042	9813	9659	10120	9930	10751	10931	10954	10463	10885	10612	10698	9773	10008
26	9451	9334	9418	8582	9392	9146	9560	9305	10183	10039	10236	9657	10096	9819	10083	9140	9451
27	9043	8842	9066	8262	8990	8702	9118	8819	9711	9345	9665	9002	9415	9214	9564	8662	9043
28	8687	8433	8695	8008	8649	8341	8722	8425	9298	8792	9197	8501	8863	8697	9089	8285	8687

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29	8392	8108	8383	7792	8394	8049	8401	8024	8964	8346	8783	8100	8460	8299	8683	7983	8392
30	8180	7902	8177	7763	8233	7925	8134	7653	8673	7950	8432	7756	8080	7978	8279	7749	8180
31	8090	7787	8133	7872	8221	7974	7995	7437	8396	7614	8136	7541	7801	7723	7991	7636	8090
32	8132	7854	8232	8069	8247	8028	8007	7408	8203	7449	7989	7435	7670	7623	7902	7694	8132
33	8209	8003	8407	8335	8365	8161	8105	7564	8115	7437	7962	7584	7775	7659	7957	7860	8209
34	8314	8302	8579	8697	8573	8473	8244	7922	8099	7598	8100	7846	7958	7812	8141	8092	8314
35	8461	8705	8811	9122	8777	8944	8554	8460	8264	7943	8292	8195	8245	8103	8317	8331	8461
36	8634	9107	9030	9396	9022	9406	8922	8989	8470	8374	8499	8576	8463	8483	8516	8591	8634
37	8823	9313	9066	9486	9092	9615	9129	9305	8750	8823	8763	9031	8683	8843	8733	8884	8823
38	8841	9298	9039	9336	9087	9388	9097	9259	8794	8995	8853	9217	8813	9002	8707	8997	8841
39	8743	9208	8925	9102	8971	9134	8847	8985	8675	8966	8674	9098	8717	8938	8565	8886	8743
40	8545	9035	8734	8783	8860	8788	8605	8685	8387	8700	8394	8670	8544	8732	8457	8743	8545
41	8340	8725	8466	8432	8741	8523	8442	8403	8120	8453	8150	8294	8402	8570	8280	8466	8340
42	8079	8350	8069	8143	8625	8205	8208	8215	7909	8231	8049	7968	8279	8426	8049	8231	8079
43	7786	7981	7711	7907	8445	7913	7963	8045	7762	7951	7826	7767	8105	8201	7757	8008	7786
44	7586	7718	7494	7635	8233	7663	7679	7843	7678	7791	7574	7575	7908	7906	7526	7756	7586
45	7705	7793	7655	7765	8310	7633	7555	7610	7653	7684	7316	7387	7837	7584	7315	7615	7705
46	7907	8097	7970	8066	8579	7873	7828	7732	7833	7772	7432	7430	7970	7718	7473	7850	7907
47	7834	8054	7889	7857	8436	7883	7967	8059	8344	7995	7911	7859	8391	8224	7847	8050	7834
48	7702	7648	7587	7329	7862	7419	7612	7868	8168	7979	7844	7958	8304	8061	7636	7833	7702
49	7320	7128	6958	6891	7101	6789	6966	7246	7628	7322	7525	7451	7583	7411	7102	7225	7320
50	6872	6417	6380	6258	6467	6277	6396	6511	6949	6551	6905	6862	6827	6792	6644	6667	6872
51	6226	5910	5940	5853	5886	5688	5977	5927	6298	6029	6198	6203	6327	6044	6141	6164	6226
52	5875	5686	5883	5679	5821	5436	5661	5567	5832	5655	5823	5709	5912	5618	5797	5705	5875
53	6057	5768	5926	5580	5889	5745	5914	5772	5811	5629	5855	5731	6070	5735	5858	5826	6057
54	5504	5561	5334	5324	5454	5513	5578	5473	5383	5591	5571	5405	5732	5457	5531	5521	5504
55	5190	4969	5091	5010	5053	5204	5127	5052	5045	5075	5132	5173	5225	5239	5142	4979	5190
56	5060	4821	4849	4872	4902	4933	4864	4754	4922	4798	5008	4727	5016	4851	4919	4889	5060
57	4572	4524	4367	4605	4674	4491	4507	4579	4601	4467	4549	4635	4691	4553	4519	4735	4572
58	4274	4551	4186	4544	4461	4310	4561	4233	4414	4409	4154	4405	4580	4320	4486	4447	4274
59	4126	4383	4139	4516	4131	4124	4317	4117	4240	4211	4026	4294	4237	4134	4284	4328	4126
60	3957	4199	4000	4233	4047	4153	4257	4089	3997	3946	3773	4167	3942	4064	4023	4225	3957

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61	3847	4043	4017	4015	4067	4053	4020	3899	3907	3828	3891	3953	3816	3814	3965	4042	3847
62	3861	3868	3996	3919	4000	3986	3919	3966	3792	3783	3875	3851	3803	3800	3891	3846	3861
63	3759	3686	3967	3797	3804	3850	3731	3749	3709	3667	3783	3669	3683	3688	3712	3787	3759
64	3676	3420	3739	3633	3691	3703	3625	3552	3583	3463	3611	3461	3532	3447	3488	3328	3676
65	3394	3262	3558	3440	3519	3450	3418	3351	3381	3318	3481	3340	3306	3313	3259	3269	3394
66	3179	3257	3392	3331	3318	3297	3211	3212	3180	3172	3308	3220	3101	3244	3051	3175	3179
67	3055	3086	3230	3160	3117	3145	3005	3073	2979	3026	3134	3098	3018	3220	2951	3120	3055
68	2804	2881	2940	2868	2916	2992	2830	2935	2768	2855	2960	2859	2806	3055	2777	2923	2804
69	2651	2716	2747	2644	2749	2791	2655	2752	2548	2673	2703	2584	2667	2884	2602	2783	2651
70	2542	2472	2626	2504	2616	2542	2484	2687	2498	2528	2566	2455	2566	2620	2455	2700	2542
71	2417	2348	2546	2340	2481	2429	2389	2468	2357	2369	2482	2303	2445	2477	2358	2467	2417
72	2245	2262	2469	2239	2369	2306	2293	2336	2299	2288	2411	2161	2306	2451	2258	2336	2245
73	2148	2184	2263	2113	2261	2235	2246	2200	2212	2253	2259	2152	2216	2186	2201	2225	2148
74	2092	2037	2077	1983	2111	2043	2130	2060	2103	2104	2172	1999	2133	2045	2100	2019	2092
75	1989	1927	1958	1875	1997	1914	1965	1926	1994	1973	1998	1920	2042	1895	1992	1948	1989
76	1825	1838	1891	1816	1889	1826	1882	1845	1880	1889	1904	1828	1920	1821	1828	1874	1825
77	1785	1793	1819	1795	1832	1789	1798	1806	1798	1814	1847	1773	1844	1766	1820	1795	1785
78	1737	1740	1764	1741	1786	1727	1782	1753	1791	1736	1790	1739	1756	1722	1743	1721	1737
79	1705	1687	1726	1689	1758	1723	1756	1735	1691	1684	1727	1681	1729	1679	1722	1692	1705
80	1673	1634	1687	1636	1704	1672	1736	1717	1676	1671	1723	1613	1704	1635	1703	1665	1673
81	1650	1632	1649	1622	1708	1645	1727	1690	1666	1651	1691	1602	1678	1609	1683	1631	1650
82	1640	1610	1638	1612	1677	1636	1689	1682	1658	1652	1686	1598	1673	1608	1669	1628	1640
83	1638	1611	1658	1616	1661	1630	1664	1707	1657	1657	1687	1623	1649	1588	1643	1648	1638
84	1638	1633	1678	1632	1700	1664	1702	1744	1688	1681	1730	1662	1677	1601	1658	1681	1638
85	1659	1678	1711	1673	1741	1708	1784	1800	1718	1728	1769	1676	1711	1628	1692	1707	1659
86	1718	1761	1758	1718	1809	1770	1858	1877	1794	1847	1813	1734	1822	1702	1738	1767	1718
87	1787	1843	1832	1829	1867	1843	1895	1934	1844	1908	1898	1838	1887	1814	1844	1872	1787
88	1644	1665	1677	1637	1667	1599	1698	1713	1599	1636	1671	1647	1664	1631	1683	1752	1644
89	1377	1430	1420	1387	1419	1309	1349	1374	1320	1353	1382	1361	1400	1326	1418	1438	1377
90	1033	1038	1057	1047	1021	892	893	799	838	885	946	1016	1030	976	1044	998	1033
91	228	250	515	597	623	538	354	158	182	197	510	631	623	572	466	199	228
92	112	112	204	241	285	218	200	55	110	117	189	227	256	227	204	75	112

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93	15	17	163	227	251	234	163	13	13	14	147	219	248	211	142	15	15
94	13	14	103	234	289	264	88	31	16	19	90	202	244	198	80	29	13
95	107	102	40	203	308	187	25	139	118	122	32	208	287	187	28	129	107
96	377	362	24	91	146	72	21	370	392	396	28	80	139	72	29	428	377
97	589	481	51	24	42	19	46	422	599	531	71	19	36	18	67	464	589
98	535	421	134	11	14	11	125	453	573	460	170	11	14	11	158	440	535
99	487	347	176	11	14	12	184	365	510	383	197	12	13	13	180	358	487
100	411	307	183	14	13	14	182	323	440	321	219	15	16	15	188	285	411
101	360	255	194	17	20	18	190	295	412	279	218	21	23	21	182	264	360
102	326	234	175	26	41	25	200	260	362	267	205	35	54	34	183	241	326
103	306	224	171	47	90	58	195	230	315	228	198	69	113	71	190	218	306
104	266	192	189	111	159	119	181	194	261	223	203	129	181	148	213	194	266
105	240	174	182	168	253	200	171	172	236	194	187	198	274	231	197	161	240
106	199	155	174	245	305	250	181	159	205	171	176	281	346	290	193	150	199
107	171	142	169	304	371	300	183	135	183	142	177	334	399	340	201	128	171
108	150	120	167	335	403	325	176	128	161	129	169	351	434	353	187	115	150
109	118	99	152	355	433	345	186	110	122	114	156	362	451	365	197	107	118
110	113	104	152	341	442	349	166	103	104	102	156	357	463	371	194	106	113
111	102	93	154	331	430	333	158	99	95	96	162	348	451	357	171	100	102
112	82	93	156	328	406	325	156	87	83	95	166	332	430	340	163	95	82
113	71	82	163	315	392	317	160	77	69	85	170	321	412	339	167	88	71
114	61	73	158	295	376	318	167	74	56	79	167	306	399	343	168	81	61
115	50	72	161	293	367	316	170	74	42	79	164	300	386	338	171	80	50
116	40	72	165	288	349	312	172	72	37	76	165	296	373	324	178	78	40
117	37	74	164	277	341	296	163	70	33	74	167	295	350	304	172	76	37
118	36	71	167	260	324	267	156	65	31	70	176	281	331	289	171	73	36
119	35	75	163	250	293	246	150	68	30	69	169	261	306	269	166	76	35
120	32	80	153	241	271	233	144	77	27	71	160	248	292	248	161	80	32
121	35	78	151	230	268	219	148	81	28	72	161	239	287	238	158	80	35
122	36	79	139	218	266	206	148	77	32	74	161	232	281	233	156	83	36
123	35	76	136	204	260	203	145	74	31	73	161	222	277	234	153	86	35
124	31	73	135	200	251	206	137	72	29	75	156	210	266	232	151	89	31

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125	25	72	129	194	229	201	135	70	23	77	143	200	247	217	151	90	25
126	31	73	120	178	206	184	126	69	25	77	129	187	226	198	141	88	31
127	43	73	115	167	189	170	116	70	38	77	123	174	209	184	129	83	43
128	47	73	113	160	177	161	110	70	41	74	118	164	195	169	122	77	47
129	52	72	110	154	166	149	106	69	46	69	109	156	177	157	113	72	52
130	51	71	105	144	158	140	102	66	46	68	102	147	162	147	107	71	51
131	47	69	100	137	155	134	99	66	43	68	98	137	154	141	102	70	47
132	47	64	102	130	147	130	98	66	42	66	97	130	147	133	98	69	47
133	49	60	95	122	137	122	95	64	46	63	95	124	141	127	94	68	49
134	49	60	89	114	128	113	92	61	46	61	94	119	138	120	93	67	49
135	48	61	86	109	120	107	90	58	44	59	90	114	131	115	89	65	48
136	46	61	83	104	115	101	89	57	42	58	86	109	125	110	86	63	46
137	46	60	81	101	112	98	86	55	39	57	83	105	119	106	84	60	46
138	47	58	81	97	108	96	85	52	39	55	82	102	113	101	83	58	47
139	47	57	80	95	104	93	82	50	38	52	79	97	108	98	81	55	47
140	44	55	79	90	99	90	78	46	35	50	76	91	102	93	80	52	44
141	42	52	77	85	92	85	72	44	32	47	72	84	94	87	77	50	42
142	40	49	72	78	84	77	65	41	30	44	68	77	87	80	72	49	40
143	37	46	64	71	76	69	58	39	28	41	62	70	80	73	67	46	37
144	35	45	57	65	69	61	52	38	25	38	57	64	74	67	61	45	35
145	33	44	52	60	64	56	47	38	26	36	53	60	69	62	56	44	33
146	35	44	47	57	60	52	44	37	29	36	50	56	64	58	53	44	35
147	38	44	45	54	56	50	42	37	32	35	47	53	61	55	51	43	38
148	41	42	45	51	53	48	41	37	35	35	46	51	59	52	50	42	41
149	43	41	44	49	51	46	40	36	37	34	44	49	57	50	50	41	43
150	43	40	43	47	49	45	40	36	37	34	43	47	55	48	49	40	43
151	43	38	42	45	47	44	39	35	35	33	44	45	54	46	48	39	43
152	42	37	41	43	46	43	39	34	34	32	43	44	51	45	47	38	42
153	40	36	41	42	45	42	38	33	33	31	41	43	49	43	45	37	40
154	39	35	40	41	43	41	37	33	31	30	39	41	47	42	44	36	39
155	38	33	39	40	42	40	36	32	29	28	37	40	45	41	42	35	38
156	37	32	37	39	40	39	35	31	28	27	35	39	43	39	40	34	37

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157	36	31	35	37	38	38	34	30	28	25	33	38	41	38	38	33	36
158	34	30	34	36	36	36	33	30	28	25	32	37	39	37	36	32	34
159	33	29	32	34	35	35	32	29	28	25	30	35	38	36	35	31	33
160	32	28	31	33	35	34	31	28	27	25	28	34	37	35	34	30	32
161	32	28	30	32	34	33	30	28	27	25	26	32	36	33	33	29	32
162	31	28	29	30	33	31	29	27	27	26	25	31	35	31	32	29	31
163	30	28	28	29	32	30	28	27	26	26	23	30	33	30	31	28	30
164	30	27	27	28	31	29	27	26	26	26	22	29	32	29	30	27	30
165	29	27	26	27	30	29	26	26	25	26	22	27	30	28	28	27	29
166	29	27	26	26	29	29	25	26	25	26	22	25	29	26	27	25	29
167	29	30	26	25	29	29	25	26	26	26	23	26	29	26	27	25	29
168	29	28	26	25	29	29	25	27	27	28	25	26	29	25	28	27	29
169	30	29	27	25	29	29	26	28	29	29	27	26	28	25	28	28	30
170	30	29	28	25	30	29	27	29	31	30	28	27	28	25	29	29	30
171	31	30	28	25	30	30	27	30	33	32	30	28	28	25	29	30	31
172	32	31	29	25	31	30	27	30	34	33	31	29	28	24	29	31	32
173	34	31	30	25	31	31	27	31	34	35	31	29	28	24	30	31	34
174	35	31	31	25	31	31	27	32	34	35	31	30	28	24	30	32	35
175	36	32	33	26	32	32	27	33	35	36	32	31	29	25	32	33	36
176	37	33	34	26	32	32	27	34	35	37	32	32	30	26	34	34	37
177	38	33	34	26	32	32	27	34	36	38	32	33	30	26	35	35	38
178	38	32	35	26	32	32	27	34	36	38	32	33	30	27	35	36	38
179	38	32	35	26	31	31	27	34	35	38	32	33	30	27	35	35	38
180	38	38	38	38	38	38	38	38	38	38	38	38	38	38	38	38	38

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 *******