



Report No.: GZE160347-H

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 Lamp

Model name(s): LED-8030M40C-A

Representative (Tested) Model: LED-8030M40C-A

Model Different :N/A

Test & Report By:

Jack Luo

Engineer: Jack Luo

Date: Apr.28,2016

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-A/2

Address: Standard-Tech Building, No.6 Guanhong Road,Guangzhou Science City, Guangzhou 510663, China

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<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-H
Laboratory Contact Name	Tommy Liang

Product Information:

Organization Name	LIGHT EFFICIENT DESIGN		
Brand Name	N/A		
Model Number	LED-8030M40C-A		
SKU (if available)	N/A		
Type of Luminaire (for integral lamps, list base type and lamp type)	LED Lamp		
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	--	139.5	W
Input Current	--	0.6540	A
Input Voltage (ac)	--	220.0	V
Power Factor	--	0.9696	
Off-State Power	--	0	W

Photometric Characteristics

Total Initial Lumen Output	--	15667	lm
Initial Lumen Efficacy	--	112.31	lm/w
Correlated color temperature / CCT	4017	--	K
Color rendering index / CRI	83.8	--	
R9 Value	10	--	
Duv	0.0016	--	
Luminous Intensity Distribution			
Center beam candlepower (if applicable)		4425	cd
Beam angle (if applicable)		104.0	°
Zonal lumens in the 0°-60° zone		64.5	%
Zonal lumens in the 60°-90° zone	-----	18.5	%
Zonal lumens in the 90°-120° zone		9.7	%
Zonal lumens in the 120°-180° zone		7.3	%

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Test Specifications:	
Date of Receipt	: Apr.01,2016
Date of Test	: Apr.24,2016
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 $25^{\circ}\text{C} \pm 1^{\circ}\text{C}$, 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 220 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 $25^{\circ}\text{C} \pm 1^{\circ}\text{C}$. 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 220 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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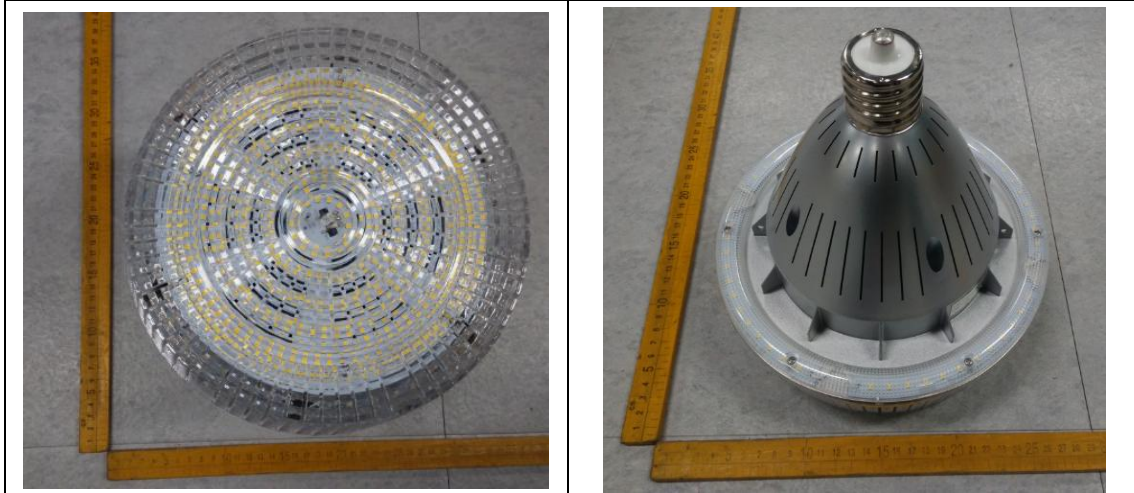
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1. Product Information:

Brand Name	N/A
Model Number	LED-8030M40C-A
Luminaire Type	LED Lamp
Rated Voltage / Frequency	220~347 Vac, 50/60Hz
Nominal Power	140W
Rated Initial Lamp Lumen	--
Declared CCT	4000K
LED Manufacturer	N/A
LED Model	N/A
Sample Receipt Date	Apr.01,2016
Sample Number	GZE160347-H1(4000K)

Photo



2.1 Electrical, Photometric and Chromaticity Measurements (Refer to Work Instruction QD25)	IES LM-79 2008
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Test date	2016-04-24	Test Ambient:	25.2 °C
Test Orientation	As intended	Stabilization Time (min)	90
Model Number	LED-8030M40C-A		

Electrical Measurement:

Sample No.	Voltage (Vac)	Frequency (Hz)	Current (A)	Power (W)	Power Factor	THD %
GZE160347	220.0	60	0.6540	139.5	0.9696	16.86
-H1	347.0	60	0.4380	139.0	0.9145	17.77

Sphere-Spectroradiometer Method:

Parameter	Result
Test Voltage (V)	220.0
Frequency (Hz)	60
Color Rendering Index (CRI)	83.8
R9	10
CCT (K)	4017
Chromaticity (x, y)	x=0.3808 y=0.3805
Chromaticity (u', v')	u'=0.2239 v'=0.5033
Duv	0.0016

Special Color Rendering Indices			
R1	82	R9	10
R2	91	R10	79
R3	96	R11	80
R4	81	R12	62
R5	82	R13	85
R6	87	R14	98
R7	86	R15	76
R8	64	--	--

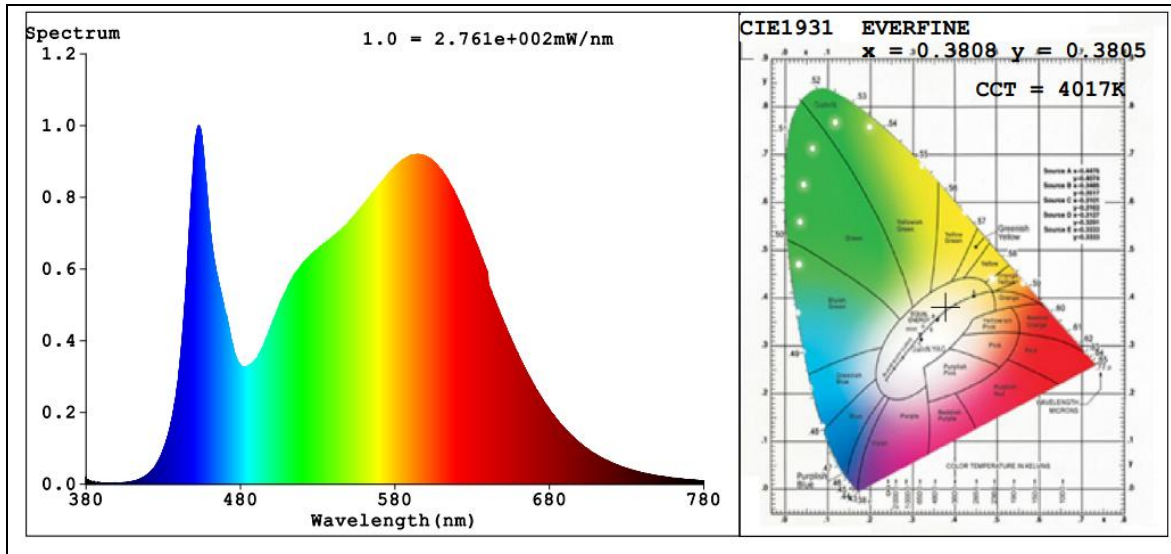
Goniophotometer Method :

Parameter	Result
Test Voltage (V)	220.0
Frequency (Hz)	60
Total Luminous (lm)	15667
Luminous Efficacy (lm/W)	112.31
Beam Angle°	104.0
Center Beam Candle Power (cd)	4425

Goniophotometer Methodn :

Parameter	Result
Test Voltage (V)	347.0
Frequency (Hz)	60
Total Luminous (lm)	15642
Luminous Efficacy (lm/W)	112.57

Spectral Power Distribution & Chromaticity Diagram



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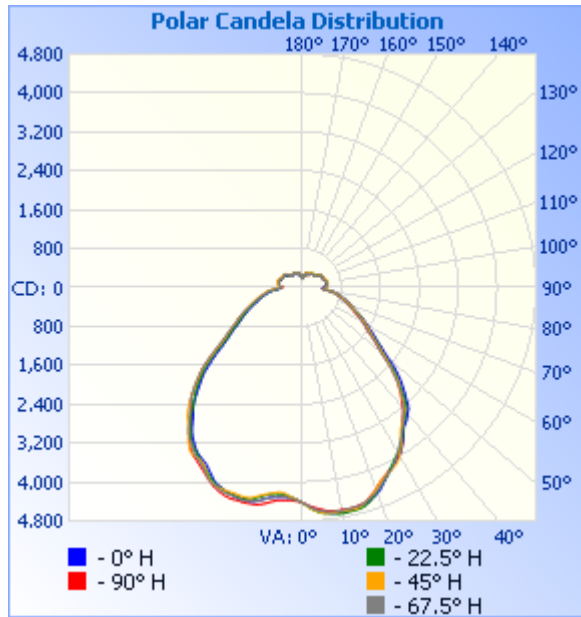
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Zonal Lumen Tabulation

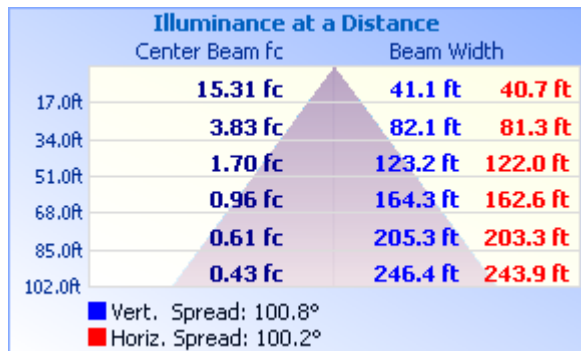
Zonal Lumen Summary		
Zone	Lumens	% Luminaire
0-30	3,706.7	23.7%
0-40	6,064.5	38.7%
0-60	10,102.7	64.5%
60-90	2,896.7	18.5%
70-100	2,124.3	13.6%
90-120	1,525.3	9.7%
0-90	12,999.3	83%
90-180	2,666.6	17%
0-180	15,666.0	100%

Lumens Per Zone					
Zone	Lumens	% Total	Zone	Lumens	% Total
0-10	430.1	2.7%	90-100	528.2	3.4%
10-20	1,294.7	8.3%	100-110	533.3	3.4%
20-30	1,982.0	12.7%	110-120	463.8	3%
30-40	2,357.7	15.0%	120-130	395.1	2.5%
40-50	2,299.3	14.7%	130-140	276.7	1.8%
50-60	1,738.9	11.1%	140-150	216.8	1.4%
60-70	1,300.6	8.3%	150-160	146.7	0.9%
70-80	967.4	6.2%	160-170	83.7	0.5%
80-90	628.7	4.0%	170-180	22.3	0.1%

Photometric Data



Illuminance Plots



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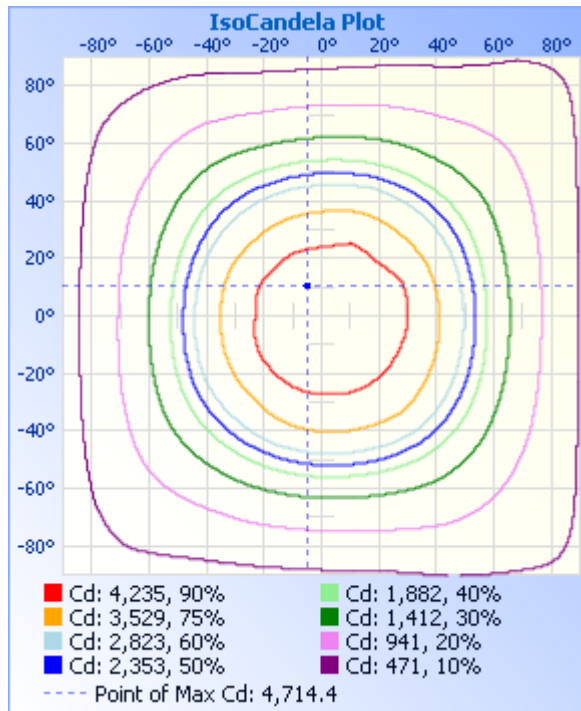
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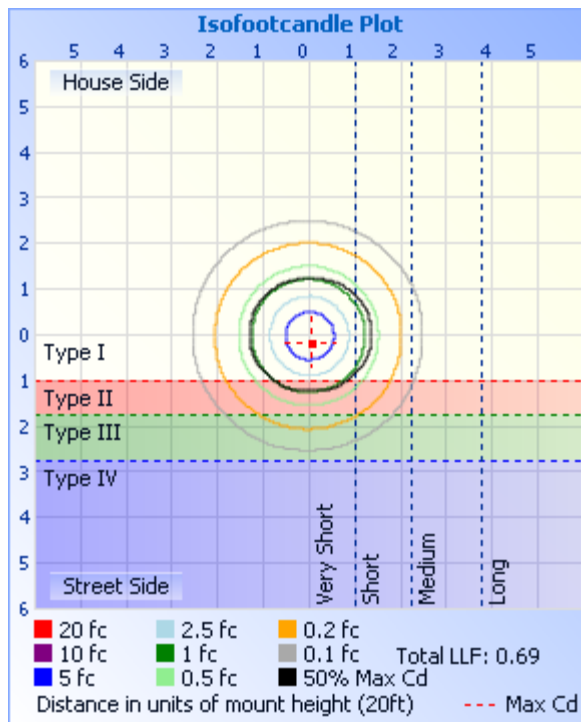
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ISOCANDELA DIAGRAM



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	4425	4425	4425	4425	4425	4425	4425	4425	4425	4425	4425	4425	4425	4425	4425	4425	4425
1	4469	4477	4481	4469	4457	4432	4412	4397	4382	4382	4382	4386	4401	4416	4433	4454	4469
2	4521	4541	4539	4519	4497	4452	4413	4384	4349	4345	4347	4364	4390	4415	4449	4493	4521
3	4564	4585	4576	4557	4526	4482	4434	4378	4332	4312	4320	4351	4379	4416	4472	4525	4564
4	4598	4621	4615	4589	4555	4513	4452	4383	4324	4289	4283	4334	4388	4437	4508	4562	4598
5	4624	4653	4646	4612	4583	4545	4477	4397	4322	4274	4247	4314	4392	4453	4541	4595	4624
6	4650	4669	4664	4633	4610	4573	4507	4413	4329	4269	4232	4314	4400	4475	4569	4624	4650
7	4673	4678	4670	4648	4627	4591	4529	4427	4342	4274	4240	4330	4409	4504	4592	4635	4673
8	4684	4687	4672	4651	4639	4603	4537	4448	4353	4282	4262	4357	4438	4531	4606	4650	4684
9	4683	4707	4667	4651	4639	4616	4551	4471	4373	4302	4287	4385	4472	4550	4616	4668	4683
10	4683	4714	4670	4652	4638	4623	4569	4487	4406	4333	4314	4415	4509	4565	4629	4672	4683
11	4687	4714	4673	4645	4640	4632	4578	4501	4445	4369	4342	4449	4540	4580	4647	4674	4687
12	4682	4705	4670	4644	4643	4635	4568	4520	4488	4413	4380	4484	4560	4587	4661	4677	4682
13	4670	4706	4677	4638	4639	4635	4559	4517	4514	4461	4423	4507	4567	4598	4678	4678	4670
14	4660	4700	4674	4636	4631	4628	4566	4509	4526	4493	4455	4525	4572	4609	4693	4678	4660
15	4645	4688	4654	4625	4617	4617	4561	4506	4519	4504	4465	4537	4581	4614	4700	4678	4645
16	4628	4669	4614	4596	4597	4603	4550	4508	4522	4509	4469	4539	4581	4616	4703	4673	4628
17	4612	4632	4574	4565	4560	4575	4540	4506	4528	4506	4462	4529	4574	4626	4702	4657	4612
18	4577	4580	4527	4533	4510	4544	4519	4504	4523	4496	4456	4523	4579	4626	4693	4633	4577
19	4539	4530	4475	4501	4461	4513	4496	4492	4503	4493	4455	4514	4581	4623	4668	4601	4539
20	4501	4473	4413	4457	4408	4477	4473	4478	4481	4491	4460	4515	4573	4607	4625	4560	4501
21	4452	4418	4353	4408	4348	4429	4446	4453	4465	4473	4460	4509	4560	4587	4574	4512	4452
22	4384	4360	4296	4354	4295	4377	4406	4427	4440	4454	4462	4500	4537	4561	4513	4469	4384
23	4313	4301	4248	4295	4248	4327	4363	4393	4422	4439	4460	4473	4512	4523	4445	4423	4313
24	4254	4253	4220	4243	4204	4271	4311	4345	4391	4415	4449	4449	4482	4478	4387	4369	4254
25	4192	4191	4197	4205	4169	4227	4248	4300	4342	4379	4427	4428	4444	4427	4327	4321	4192
26	4142	4128	4171	4162	4136	4198	4190	4252	4281	4330	4382	4393	4399	4376	4264	4286	4142
27	4099	4070	4140	4105	4103	4176	4145	4204	4224	4282	4318	4336	4352	4333	4206	4258	4099
28	4066	4010	4108	4038	4055	4152	4111	4160	4167	4234	4248	4277	4305	4298	4160	4215	4066

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29	4029	3961	4053	3971	3998	4115	4082	4125	4122	4182	4182	4223	4262	4263	4120	4172	4029
30	3986	3924	3990	3900	3952	4064	4045	4098	4092	4139	4136	4176	4223	4235	4080	4122	3986
31	3933	3882	3914	3837	3904	4004	4003	4075	4069	4098	4120	4145	4188	4206	4040	4057	3933
32	3858	3820	3818	3773	3852	3917	3951	4035	4039	4063	4118	4116	4155	4166	3989	3988	3858
33	3773	3755	3708	3707	3776	3814	3871	3984	4001	4022	4115	4074	4122	4114	3927	3923	3773
34	3688	3676	3606	3640	3690	3712	3773	3908	3948	3982	4100	4024	4079	4042	3869	3857	3688
35	3610	3592	3528	3574	3586	3603	3672	3812	3889	3936	4051	3964	4029	3961	3815	3772	3610
36	3545	3524	3470	3512	3496	3512	3569	3729	3834	3887	3981	3912	3955	3871	3754	3686	3545
37	3504	3468	3424	3441	3419	3443	3472	3652	3773	3819	3903	3862	3867	3782	3680	3606	3504
38	3469	3421	3375	3357	3349	3376	3392	3569	3700	3746	3813	3807	3776	3693	3588	3537	3469
39	3415	3362	3324	3290	3287	3325	3331	3489	3603	3667	3730	3729	3678	3604	3492	3486	3415
40	3365	3308	3267	3210	3202	3278	3275	3412	3509	3587	3657	3628	3589	3528	3407	3447	3365
41	3315	3249	3174	3149	3117	3198	3233	3345	3428	3503	3598	3538	3502	3461	3337	3392	3315
42	3237	3166	3054	3090	3032	3118	3141	3254	3361	3392	3544	3458	3423	3406	3269	3332	3237
43	3126	3060	2966	2976	2959	3038	3048	3163	3292	3291	3456	3383	3363	3353	3209	3275	3126
44	3027	2941	2873	2877	2857	2951	2956	3071	3190	3209	3363	3310	3318	3294	3164	3170	3027
45	2930	2835	2806	2763	2786	2856	2852	2980	3087	3128	3268	3245	3257	3192	3080	3046	2930
46	2834	2727	2692	2643	2670	2758	2742	2880	2984	3046	3167	3157	3165	3090	2993	2940	2834
47	2733	2636	2558	2529	2554	2649	2645	2789	2879	2952	3066	3068	3061	3001	2887	2860	2733
48	2621	2513	2447	2419	2433	2536	2552	2681	2793	2846	2965	2980	2949	2898	2793	2755	2621
49	2509	2385	2336	2274	2296	2410	2427	2561	2695	2740	2850	2876	2829	2809	2692	2640	2509
50	2363	2246	2220	2137	2159	2264	2284	2422	2561	2646	2761	2768	2747	2696	2588	2507	2363
51	2229	2132	2107	2037	2043	2141	2160	2288	2429	2539	2644	2653	2652	2588	2451	2370	2229
52	2119	2038	2018	1961	1948	2031	2041	2174	2301	2408	2511	2546	2512	2465	2306	2234	2119
53	2023	1957	1926	1887	1872	1934	1942	2045	2167	2270	2369	2418	2386	2330	2168	2116	2023
54	1927	1872	1845	1806	1795	1852	1852	1944	2040	2120	2240	2283	2230	2186	2051	2014	1927
55	1850	1794	1772	1719	1724	1780	1773	1858	1938	1989	2118	2164	2105	2067	1952	1919	1850
56	1784	1714	1709	1644	1642	1715	1706	1768	1849	1888	2001	2042	2012	1973	1864	1840	1784
57	1716	1647	1650	1595	1575	1651	1641	1697	1778	1819	1909	1937	1917	1871	1804	1769	1716
58	1651	1594	1605	1546	1529	1582	1573	1636	1708	1748	1828	1857	1820	1803	1723	1708	1651
59	1594	1541	1559	1497	1481	1533	1519	1573	1645	1674	1764	1788	1739	1750	1654	1643	1594
60	1537	1495	1510	1447	1435	1487	1468	1510	1569	1602	1700	1719	1677	1673	1595	1592	1537

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61	1485	1449	1451	1393	1385	1438	1423	1461	1510	1539	1633	1645	1621	1620	1536	1540	1485
62	1434	1394	1403	1340	1334	1389	1379	1416	1455	1488	1572	1583	1565	1569	1487	1489	1434
63	1387	1337	1351	1294	1282	1338	1335	1369	1403	1441	1514	1524	1509	1517	1445	1438	1387
64	1336	1284	1292	1239	1229	1284	1295	1322	1362	1395	1463	1475	1468	1472	1399	1394	1336
65	1279	1236	1233	1192	1178	1228	1251	1270	1315	1348	1418	1426	1424	1425	1348	1343	1279
66	1224	1194	1186	1152	1138	1181	1201	1226	1270	1304	1375	1379	1374	1371	1300	1294	1224
67	1175	1154	1154	1110	1095	1144	1146	1178	1231	1263	1331	1336	1326	1309	1252	1237	1175
68	1134	1116	1123	1067	1054	1108	1103	1130	1186	1226	1277	1289	1271	1253	1202	1186	1134
69	1097	1079	1088	1026	1016	1069	1058	1098	1140	1185	1232	1239	1217	1203	1158	1153	1097
70	1064	1039	1059	986	977	1034	1020	1062	1101	1144	1191	1187	1170	1162	1120	1125	1064
71	1031	998	1020	955	950	1003	986	1022	1063	1094	1153	1135	1123	1126	1077	1083	1031
72	1000	965	986	919	926	972	949	989	1019	1050	1119	1100	1083	1102	1036	1039	1000
73	968	926	942	876	889	943	913	954	980	1017	1084	1062	1049	1074	1000	1006	968
74	931	887	900	841	857	903	876	926	954	985	1046	1020	1006	1045	972	968	931
75	896	854	858	811	824	866	848	891	925	952	1012	983	977	1014	940	931	896
76	858	825	825	780	791	844	817	855	892	919	979	951	952	975	907	897	858
77	824	792	794	750	762	809	795	819	863	886	946	920	924	941	870	859	824
78	793	769	770	725	735	784	769	788	828	852	907	879	888	909	836	827	793
79	764	744	745	699	713	758	745	763	794	822	869	846	850	880	805	795	764
80	736	710	718	668	685	728	715	732	765	795	834	812	811	845	780	764	736
81	708	673	687	626	646	694	679	702	733	770	813	783	781	814	753	735	708
82	672	623	630	580	598	647	640	666	701	744	791	756	760	789	725	703	672
83	620	576	578	539	551	598	589	627	670	706	764	728	735	768	687	671	620
84	567	533	536	495	504	552	544	579	633	664	731	696	704	741	648	620	567
85	520	488	500	454	457	512	499	533	583	617	696	664	667	709	601	567	520
86	479	449	468	426	427	476	457	498	534	570	646	619	619	654	554	527	479
87	443	425	440	411	408	448	425	468	497	527	591	565	563	593	510	490	443
88	421	422	436	419	410	434	408	445	469	488	544	519	513	540	464	458	421
89	413	443	455	439	431	447	412	430	450	453	506	480	470	495	426	437	413
90	433	462	480	454	445	469	434	425	437	433	474	449	438	463	406	432	433
91	458	471	501	467	458	486	452	439	437	428	456	431	416	444	407	445	458
92	475	472	509	476	468	497	466	451	448	435	453	428	410	448	436	461	475

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93	483	473	515	484	477	508	476	463	454	453	472	441	428	473	467	478	483
94	490	476	515	491	485	513	483	477	464	462	490	456	450	499	482	494	490
95	490	489	517	493	492	514	494	485	475	471	502	466	468	517	487	502	490
96	493	505	515	497	497	513	506	488	484	476	508	475	482	527	484	498	493
97	495	513	518	501	502	516	518	494	488	481	511	480	488	528	482	496	495
98	502	516	523	505	508	525	522	499	493	489	507	485	488	517	490	498	502
99	510	513	529	507	508	528	515	503	501	500	508	488	488	511	508	504	510
100	513	505	530	505	503	528	505	509	508	511	513	490	489	515	522	515	513
101	517	508	526	500	496	524	500	510	514	516	521	492	494	525	523	523	517
102	514	519	516	500	491	513	505	508	518	518	529	498	499	534	517	527	514
103	509	520	506	502	486	502	513	503	517	515	533	501	502	538	513	526	509
104	503	517	506	499	485	498	511	500	513	513	533	500	498	538	514	515	503
105	497	509	511	498	491	507	507	497	505	519	527	498	490	528	523	505	497
106	495	501	511	494	489	511	498	501	499	522	517	497	487	511	521	501	495
107	496	491	509	486	485	509	490	499	492	520	514	496	481	505	509	500	496
108	497	481	501	476	484	502	487	494	487	511	511	494	475	503	500	500	497
109	493	474	494	471	478	490	483	494	490	501	517	493	477	510	492	500	493
110	486	470	492	472	469	487	474	494	497	492	516	488	478	515	491	495	486
111	478	465	495	465	457	491	465	487	493	485	504	483	479	514	481	489	478
112	472	463	493	461	452	491	457	475	482	478	492	481	483	507	474	481	472
113	466	461	486	456	452	478	454	468	475	471	486	480	485	498	468	478	466
114	461	459	477	447	447	463	452	460	467	460	491	475	476	495	462	471	461
115	458	460	470	445	444	459	455	453	464	452	496	466	465	493	458	462	458
116	460	457	472	456	445	461	463	449	458	453	488	462	459	481	455	455	460
117	462	462	470	462	451	464	462	451	454	450	471	458	455	471	452	454	462
118	455	468	463	466	464	460	462	457	450	446	461	451	448	466	454	457	455
119	453	466	460	460	467	456	456	459	448	448	461	446	447	464	454	457	453
120	453	461	462	451	456	454	456	461	448	450	463	449	451	465	450	451	453
121	454	456	460	452	445	454	456	458	448	454	457	452	453	459	449	455	454
122	449	451	454	456	444	445	456	448	452	458	453	457	456	453	450	458	449
123	441	455	453	459	450	443	456	438	452	457	461	458	464	452	450	445	441
124	438	461	456	455	452	450	451	438	441	449	464	457	459	458	446	435	438

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125	440	458	457	440	442	450	444	437	433	445	455	449	446	447	444	432	440
126	440	447	455	427	427	444	433	437	425	451	450	447	440	439	448	438	440
127	437	430	443	410	409	426	423	432	423	452	450	447	438	438	453	440	437
128	431	413	420	395	397	408	406	421	420	444	455	444	444	444	449	439	431
129	414	394	399	386	385	392	389	405	412	429	453	434	433	447	439	426	414
130	393	383	381	373	374	380	377	386	399	414	438	421	415	442	422	409	393
131	377	376	369	356	361	372	368	373	382	393	422	410	403	422	407	390	377
132	364	368	358	345	352	360	362	363	372	380	406	395	395	404	390	375	364
133	353	358	351	339	345	348	353	352	363	375	393	382	386	389	378	361	353
134	342	350	348	333	340	340	345	342	351	372	383	375	375	380	369	350	342
135	336	347	346	333	337	337	342	334	339	362	372	364	363	370	360	342	336
136	334	346	346	335	336	339	339	330	331	348	360	355	351	361	352	338	334
137	333	345	347	337	336	344	338	328	328	341	350	346	344	355	350	336	333
138	333	348	349	339	334	347	339	327	329	339	344	337	337	350	350	334	333
139	335	352	352	343	337	349	343	329	330	338	344	332	333	348	348	334	335
140	336	356	356	346	342	351	349	332	331	337	346	332	333	347	349	335	336
141	339	357	357	345	345	355	352	336	331	339	350	334	335	350	352	336	339
142	346	355	357	345	345	355	350	339	332	345	350	335	337	352	355	339	346
143	348	353	357	342	343	354	350	344	337	348	350	336	340	354	359	346	348
144	347	351	355	340	340	352	349	348	338	349	352	340	344	357	361	349	347
145	346	348	354	338	337	351	346	349	339	351	355	342	347	359	363	349	346
146	344	346	352	336	333	348	344	348	340	351	355	343	348	360	361	349	344
147	343	344	349	333	330	345	343	345	343	349	357	344	346	360	359	347	343
148	341	340	346	327	325	342	343	342	341	348	359	344	345	359	357	344	341
149	339	333	340	322	319	335	341	338	338	346	360	343	343	357	356	341	339
150	335	329	332	317	314	331	335	328	336	345	358	341	340	354	354	338	335
151	324	330	326	310	309	327	330	320	331	338	357	339	335	348	349	331	324
152	317	322	322	306	302	321	325	316	325	335	353	333	332	345	346	322	317
153	311	317	319	301	298	318	327	313	319	329	344	328	326	342	342	319	311
154	309	314	316	298	297	316	325	309	313	325	338	324	320	338	334	316	309
155	303	312	313	296	295	313	321	303	308	322	332	321	315	334	329	313	303
156	298	309	310	293	293	309	316	300	306	317	326	318	311	330	326	310	298

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157	293	306	309	282	292	306	312	301	304	312	323	316	307	326	323	307	293
158	289	304	307	287	292	303	310	304	298	309	321	314	304	321	320	304	289
159	288	304	307	285	293	301	311	304	291	307	320	311	302	318	318	301	288
160	288	304	309	278	294	301	312	302	286	301	315	309	296	316	316	299	288
161	287	305	309	272	290	300	315	300	282	299	304	302	293	315	314	297	287
162	287	306	310	279	297	299	316	300	282	288	307	302	291	312	312	297	287
163	289	308	306	296	293	295	313	300	285	285	310	302	294	302	312	291	289
164	298	300	300	300	287	288	304	297	289	293	310	303	296	300	312	294	298
165	305	294	300	299	285	284	299	287	281	298	309	305	296	297	301	299	305
166	296	290	310	300	279	286	295	286	290	300	305	306	300	300	288	290	296
167	292	292	313	300	276	276	294	286	287	303	304	302	301	303	295	283	292
168	287	293	309	292	285	282	290	286	280	303	306	299	293	302	273	282	287
169	276	289	300	286	271	268	282	283	284	291	306	297	296	294	281	272	276
170	264	270	271	266	259	258	261	271	266	272	299	295	273	281	274	262	264
171	256	255	255	254	253	252	243	253	254	254	269	272	257	259	253	256	256
172	244	240	240	251	246	245	228	235	241	243	252	254	245	244	238	245	244
173	233	227	227	248	244	243	215	220	230	240	231	241	233	229	225	242	233
174	222	214	218	236	233	234	208	208	219	236	218	229	224	214	217	236	222
175	213	206	217	225	222	221	202	198	207	220	212	212	214	202	213	224	213
176	203	196	214	216	213	211	202	189	200	210	210	200	207	193	211	213	203
177	192	184	196	198	188	192	189	180	190	199	198	185	201	186	204	199	192
178	214	219	222	236	233	226	198	196	190	186	186	178	195	193	204	215	214
179	238	260	254	251	254	248	245	247	228	231	227	230	230	244	241	247	238
180	263	263	263	263	263	263	263	263	263	263	263	263	263	263	263	263	263

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 *******