



Report No.: GZE160347-G

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-8030M40-A

Representative (Tested) Model: LED-8030M40-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

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-G
Laboratory Contact Name	Tommy Liang

Product Information:

Organization Name	LIGHT EFFICIENT DESIGN		
Brand Name	N/A		
Model Number	LED-8030M40-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	--	144.4	W
Input Current	--	1.235	A
Input Voltage (ac)	--	120.1	V
Power Factor	--	0.9733	
Off-State Power	--	0	W

Photometric Characteristics

Total Initial Lumen Output	--	15763	lm
Initial Lumen Efficacy	--	109.16	lm/w
Correlated color temperature / CCT	3970	--	K
Color rendering index / CRI	84.0	--	
R9 Value	13	--	
Duv	-0.0000	--	
Luminous Intensity Distribution			
Center beam candlepower (if applicable)		4342	cd
Beam angle (if applicable)		104.8	°
Zonal lumens in the 0°-60° zone		64.7	%
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		7.2	%

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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 120 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 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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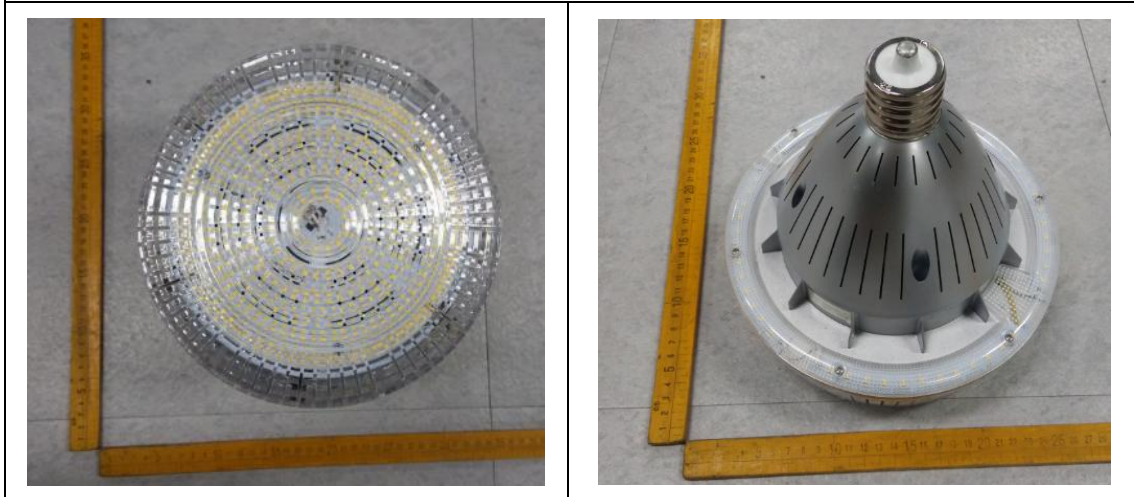
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1. Product Information:

Brand Name	N/A
Model Number	LED-8030M40-A
Luminaire Type	LED Lamp
Rated Voltage / Frequency	120~277 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-G1(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-8030M40-A		

Electrical Measurement:

Sample No.	Voltage (Vac)	Frequency (Hz)	Current (A)	Power (W)	Power Factor	THD %
GZE160347	120.1	60	1.235	144.4	0.9733	15.78
-G1	276.9	60	0.5551	140.8	0.9161	17.50

Sphere-Spectroradiometer Method:

Parameter	Result
Test Voltage (V)	120.1
Frequency (Hz)	60
Color Rendering Index (CRI)	84.0
R9	13
CCT (K)	3970
Chromaticity (x, y)	x=0.3818 y=0.3776
Chromaticity (u', v')	u'=0.2257 v'=0.5022
Duv	-0.0000

Special Color Rendering Indices			
R1	83	R9	13
R2	91	R10	79
R3	96	R11	80
R4	81	R12	63
R5	82	R13	85
R6	87	R14	98
R7	86	R15	77
R8	64	--	--

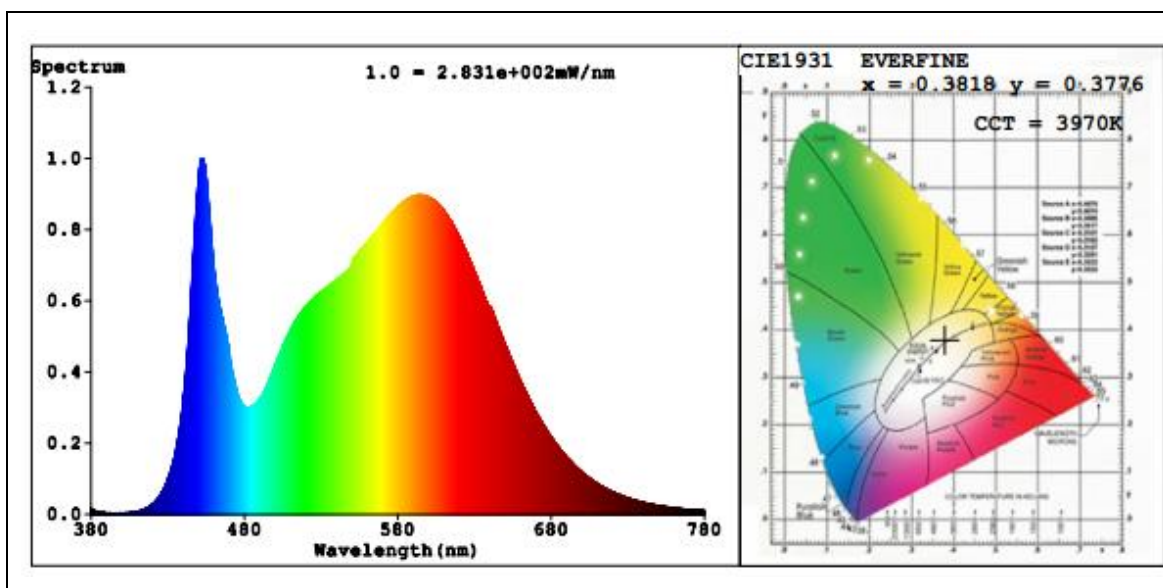
Goniophotometer Method :

Parameter	Result
Test Voltage (V)	120.1
Frequency (Hz)	60
Total Luminous (lm)	15763
Luminous Efficacy (lm/W)	109.16
Beam Angle°	104.8
Center Beam Candle Power (cd)	4342

Goniophotometer Methodn :

Parameter	Result
Test Voltage (V)	276.9
Frequency (Hz)	60
Total Luminous (lm)	15895
Luminous Efficacy (lm/W)	112.87

Spectral Power Distribution & Chromaticity Diagram



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Zonal Lumen Tabulation

Zonal Lumen Summary		
Zone	Lumens	% Luminaire
0-30	3,753.8	23.8%
0-40	6,130.7	38.9%
0-60	10,192.6	64.7%
60-90	2,910.9	18.5%
70-100	2,132.5	13.5%
90-120	1,521.2	9.7%
0-90	13,103.5	83.1%
90-180	2,658.0	16.9%
0-180	15,761.5	100%

Lumens Per Zone					
Zone	Lumens	% Total	Zone	Lumens	% Total
0-10	432.2	2.7%	90-100	538.0	3.4%
10-20	1,312.4	8.3%	100-110	527.7	3.3%
20-30	2,009.2	12.7%	110-120	455.6	2.9%
30-40	2,376.9	15.1%	120-130	395.5	2.5%
40-50	2,316.4	14.7%	130-140	275.9	1.8%
50-60	1,745.4	11.1%	140-150	215.9	1.4%
60-70	1,316.3	8.4%	150-160	145.1	0.9%
70-80	979.7	6.2%	160-170	82.4	0.5%
80-90	614.9	3.9%	170-180	22.0	0.1%

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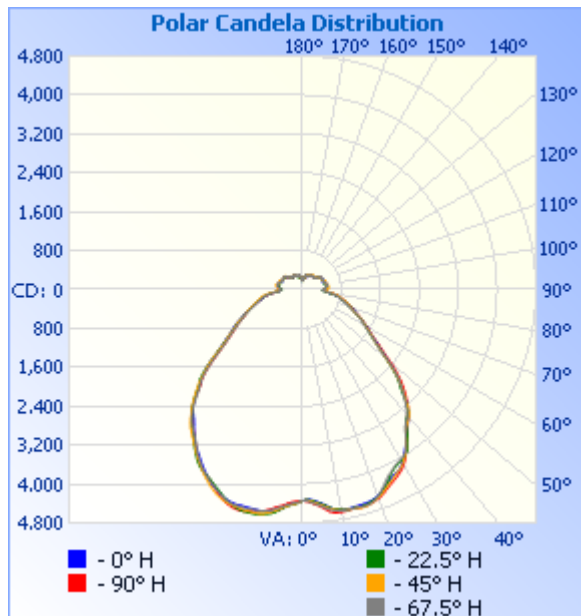
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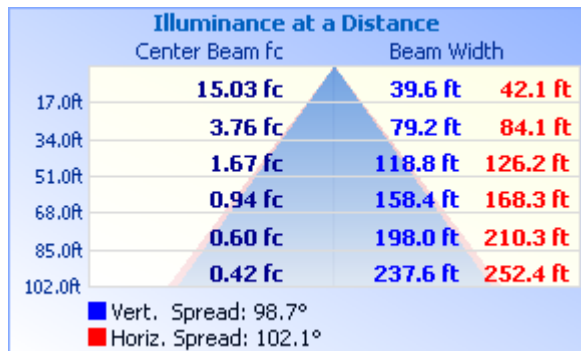
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Photometric Data



Illuminance Plots



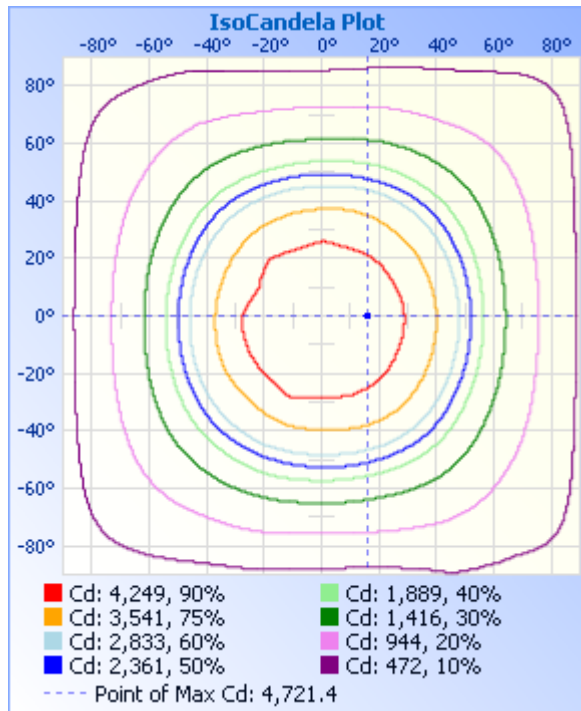
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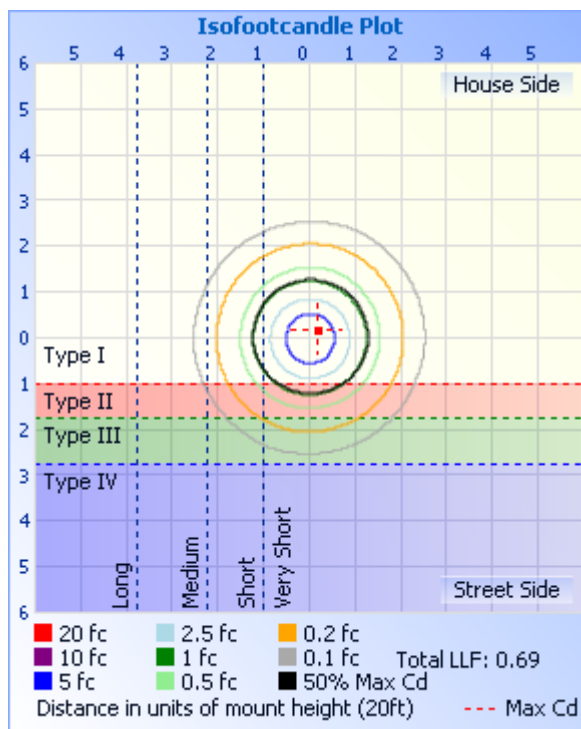
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ISOCANDELA DIAGRAM



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	4342	4342	4342	4342	4342	4342	4342	4342	4342	4342	4342	4342	4342	4342	4342	4342	4342
1	4319	4322	4331	4343	4348	4354	4364	4369	4374	4380	4378	4367	4349	4332	4322	4319	4319
2	4321	4332	4345	4369	4376	4385	4390	4395	4399	4409	4406	4392	4362	4339	4324	4318	4321
3	4345	4355	4377	4401	4408	4411	4410	4414	4421	4430	4430	4412	4378	4357	4347	4343	4345
4	4377	4392	4412	4432	4443	4448	4440	4445	4451	4458	4457	4436	4409	4389	4380	4376	4377
5	4414	4425	4445	4470	4490	4502	4485	4490	4499	4507	4495	4470	4446	4422	4409	4407	4414
6	4453	4466	4484	4513	4542	4556	4533	4532	4551	4557	4540	4502	4478	4460	4448	4444	4453
7	4507	4513	4528	4556	4598	4602	4579	4562	4584	4610	4580	4535	4511	4497	4494	4505	4507
8	4554	4550	4566	4584	4631	4638	4610	4581	4601	4646	4616	4570	4548	4542	4549	4564	4554
9	4581	4573	4588	4601	4640	4670	4643	4604	4610	4669	4650	4601	4588	4586	4587	4607	4581
10	4595	4593	4604	4616	4640	4684	4665	4621	4622	4690	4679	4622	4620	4612	4607	4625	4595
11	4605	4613	4618	4625	4638	4688	4675	4626	4628	4708	4695	4631	4642	4626	4620	4629	4605
12	4603	4616	4622	4624	4630	4681	4691	4624	4624	4715	4696	4629	4666	4641	4628	4627	4603
13	4598	4611	4622	4618	4625	4672	4705	4624	4621	4718	4690	4638	4682	4640	4624	4613	4598
14	4591	4615	4626	4619	4625	4664	4708	4626	4621	4718	4691	4647	4701	4631	4614	4605	4591
15	4587	4618	4642	4620	4634	4659	4714	4632	4616	4717	4685	4644	4715	4623	4609	4599	4587
16	4582	4613	4646	4628	4634	4651	4705	4637	4618	4704	4673	4644	4721	4611	4605	4591	4582
17	4573	4604	4634	4626	4627	4644	4695	4649	4621	4687	4663	4641	4717	4593	4596	4582	4573
18	4563	4583	4610	4610	4613	4622	4684	4654	4616	4665	4660	4639	4704	4571	4581	4576	4563
19	4543	4558	4585	4577	4596	4605	4661	4643	4610	4634	4653	4625	4682	4550	4560	4567	4543
20	4513	4526	4551	4527	4569	4578	4614	4615	4588	4596	4640	4601	4651	4527	4536	4546	4513
21	4475	4485	4513	4463	4538	4547	4553	4573	4559	4549	4621	4564	4612	4494	4507	4501	4475
22	4426	4437	4468	4395	4496	4509	4493	4519	4523	4503	4593	4528	4567	4452	4470	4441	4426
23	4379	4385	4417	4324	4447	4458	4437	4467	4486	4459	4557	4488	4510	4409	4430	4376	4379
24	4331	4319	4367	4258	4408	4409	4391	4417	4446	4419	4516	4446	4451	4369	4384	4310	4331
25	4287	4247	4329	4204	4370	4367	4357	4374	4412	4378	4471	4403	4399	4335	4334	4257	4287
26	4254	4185	4290	4161	4334	4330	4322	4340	4371	4339	4414	4364	4350	4297	4286	4226	4254
27	4234	4138	4248	4114	4297	4296	4284	4320	4314	4306	4362	4320	4310	4261	4233	4206	4234
28	4211	4103	4212	4077	4259	4256	4239	4309	4256	4273	4311	4275	4276	4226	4179	4182	4211

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29	4170	4079	4177	4049	4217	4210	4192	4290	4200	4248	4251	4223	4239	4192	4121	4159	4170
30	4113	4058	4125	4030	4157	4163	4140	4256	4141	4211	4187	4163	4186	4155	4075	4136	4113
31	4043	4030	4060	4006	4082	4106	4092	4203	4081	4164	4132	4103	4130	4118	4024	4105	4043
32	3960	3997	3986	3969	4002	4046	4048	4137	4017	4106	4075	4042	4072	4063	3965	4051	3960
33	3877	3943	3902	3904	3912	3980	3994	4056	3962	4033	4015	3978	3997	3990	3906	3983	3877
34	3800	3862	3806	3815	3821	3908	3912	3959	3917	3961	3946	3904	3922	3910	3845	3901	3800
35	3725	3767	3706	3701	3729	3819	3803	3848	3859	3886	3889	3823	3844	3828	3779	3810	3725
36	3643	3666	3614	3590	3643	3719	3699	3749	3785	3807	3829	3765	3778	3737	3701	3716	3643
37	3574	3553	3545	3505	3566	3620	3598	3664	3706	3727	3772	3713	3706	3655	3624	3634	3574
38	3512	3454	3497	3455	3506	3537	3526	3609	3631	3666	3714	3657	3644	3582	3547	3568	3512
39	3453	3396	3454	3403	3426	3463	3464	3558	3550	3618	3658	3601	3579	3532	3481	3485	3453
40	3391	3363	3403	3335	3356	3386	3391	3489	3478	3555	3589	3538	3523	3461	3404	3407	3391
41	3311	3309	3339	3264	3293	3324	3322	3410	3420	3476	3513	3464	3466	3397	3344	3346	3311
42	3219	3211	3239	3171	3244	3296	3258	3324	3360	3399	3425	3384	3390	3334	3282	3299	3219
43	3124	3093	3112	3077	3152	3199	3193	3277	3311	3338	3345	3296	3322	3263	3216	3186	3124
44	2982	2969	3012	2995	3059	3102	3127	3191	3217	3241	3250	3187	3237	3169	3121	3074	2982
45	2883	2854	2901	2904	2967	3005	3061	3105	3123	3143	3155	3078	3115	3066	3021	2977	2883
46	2785	2767	2802	2802	2870	2914	2958	3019	3028	3045	3060	2970	2985	2940	2918	2873	2785
47	2696	2667	2697	2705	2772	2812	2853	2921	2922	2932	2965	2887	2866	2837	2809	2767	2696
48	2580	2550	2572	2590	2658	2700	2749	2840	2837	2854	2872	2804	2802	2714	2682	2640	2580
49	2454	2423	2440	2461	2542	2577	2640	2737	2747	2785	2751	2715	2709	2610	2562	2505	2454
50	2321	2296	2302	2314	2413	2451	2504	2607	2639	2677	2638	2590	2591	2484	2425	2363	2321
51	2204	2174	2165	2167	2270	2309	2373	2467	2543	2542	2535	2450	2453	2352	2290	2246	2204
52	2085	2057	2058	2046	2135	2176	2234	2331	2416	2406	2414	2325	2317	2220	2164	2135	2085
53	1988	1953	1960	1944	2043	2067	2114	2210	2273	2271	2287	2193	2188	2104	2048	2042	1988
54	1905	1856	1862	1854	1936	1976	2012	2106	2145	2151	2141	2064	2075	2017	1956	1965	1905
55	1826	1773	1791	1781	1845	1898	1936	2024	2048	2043	2032	1961	1969	1923	1884	1901	1826
56	1747	1704	1736	1707	1762	1817	1864	1958	1959	1944	1935	1878	1884	1845	1821	1827	1747
57	1679	1643	1668	1647	1697	1748	1791	1888	1878	1857	1853	1806	1792	1763	1752	1746	1679
58	1626	1593	1613	1586	1633	1673	1722	1807	1797	1782	1795	1741	1723	1695	1690	1670	1626
59	1574	1543	1559	1525	1583	1607	1652	1735	1730	1714	1727	1678	1664	1641	1632	1623	1574
60	1521	1501	1504	1475	1531	1556	1584	1677	1673	1648	1655	1610	1614	1586	1573	1576	1521

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61	1465	1454	1454	1435	1477	1502	1537	1625	1621	1594	1592	1552	1563	1532	1514	1530	1465
62	1408	1404	1408	1394	1426	1457	1492	1577	1576	1545	1541	1502	1513	1472	1463	1473	1408
63	1351	1350	1361	1349	1376	1402	1442	1519	1517	1498	1503	1449	1453	1419	1413	1413	1351
64	1306	1294	1312	1300	1330	1353	1389	1452	1456	1444	1453	1398	1400	1368	1363	1358	1306
65	1261	1249	1260	1254	1279	1303	1335	1393	1401	1385	1395	1353	1351	1324	1323	1306	1261
66	1216	1200	1206	1201	1225	1250	1285	1339	1348	1335	1332	1306	1309	1290	1277	1266	1216
67	1181	1159	1154	1142	1177	1199	1240	1289	1297	1281	1278	1258	1271	1242	1221	1226	1181
68	1149	1123	1113	1088	1136	1161	1200	1248	1245	1230	1236	1209	1238	1187	1166	1187	1149
69	1104	1087	1084	1052	1105	1123	1149	1207	1197	1185	1204	1166	1193	1145	1118	1144	1104
70	1056	1048	1050	1023	1077	1087	1107	1167	1142	1146	1167	1117	1151	1109	1080	1102	1056
71	1014	1006	1021	985	1032	1054	1069	1129	1094	1105	1119	1077	1117	1078	1045	1061	1014
72	977	974	990	955	994	1022	1031	1094	1056	1062	1080	1046	1074	1042	1006	1019	977
73	943	944	955	928	962	980	996	1053	1020	1029	1053	1000	1019	1003	969	983	943
74	912	903	934	894	930	952	960	1013	989	1002	1016	966	987	974	937	948	912
75	876	862	902	857	898	913	926	980	954	970	981	939	955	936	906	919	876
76	843	833	865	827	860	874	890	939	916	934	951	909	914	900	876	894	843
77	811	807	830	794	826	842	861	903	878	896	922	880	880	870	851	863	811
78	779	782	800	764	796	817	836	873	849	866	900	857	850	849	822	832	779
79	743	752	776	740	765	792	806	845	823	844	877	830	824	821	790	792	743
80	701	711	747	713	734	761	777	810	794	812	851	799	790	778	750	746	701
81	656	667	714	679	706	728	744	778	762	782	822	766	752	732	701	698	656
82	608	616	671	641	665	689	699	741	726	741	786	722	709	684	648	647	608
83	559	561	621	591	613	640	650	697	681	692	737	672	659	626	592	589	559
84	519	523	580	545	560	575	594	638	630	639	675	617	600	559	537	537	519
85	489	491	542	500	520	521	536	574	567	576	612	556	546	515	504	507	489
86	467	457	503	460	489	484	491	525	515	519	552	508	513	492	487	488	467
87	452	429	470	428	458	452	456	492	479	478	513	476	493	479	473	475	452
88	443	411	450	408	440	433	438	470	455	452	489	458	475	473	460	466	443
89	447	418	451	409	431	424	433	459	444	436	476	449	459	458	448	462	447
90	460	445	469	433	439	430	435	456	439	430	465	444	452	445	447	473	460
91	471	471	493	453	457	451	445	463	435	427	462	442	457	452	453	486	471
92	478	488	515	464	476	467	455	481	443	436	476	454	468	463	459	495	478

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93	487	496	529	470	491	475	454	493	451	449	488	465	479	476	468	499	487
94	498	499	531	475	502	481	452	501	457	463	498	475	490	490	482	508	498
95	510	504	527	479	508	486	456	506	469	474	506	487	501	500	495	523	510
96	519	508	526	489	513	493	466	508	482	484	517	501	507	511	506	542	519
97	517	510	528	499	514	496	481	516	493	495	527	513	518	513	515	552	517
98	515	511	531	508	517	502	493	527	501	505	539	524	525	520	524	553	515
99	513	503	531	507	521	506	502	538	506	512	541	526	530	526	528	553	513
100	512	498	529	502	520	508	505	543	509	518	546	521	528	524	524	546	512
101	516	494	528	505	517	505	507	542	514	521	548	519	523	515	518	530	516
102	516	486	518	514	513	500	510	535	512	514	544	522	516	509	513	520	516
103	506	480	508	514	510	492	511	524	510	504	529	528	512	502	516	515	506
104	489	472	496	508	506	487	512	507	510	494	514	525	510	494	505	510	489
105	479	471	490	502	495	483	506	498	506	487	505	515	501	484	487	502	479
106	474	477	499	499	494	481	496	497	496	479	500	499	489	478	477	497	474
107	474	489	503	495	495	480	494	499	486	473	501	484	485	478	471	493	474
108	470	491	497	487	491	481	486	496	481	477	502	478	486	484	472	486	470
109	464	490	493	479	488	478	475	489	472	480	503	479	491	486	470	487	464
110	460	479	491	466	486	474	463	482	466	482	500	473	489	476	463	489	460
111	453	472	485	454	478	472	454	479	463	481	493	462	479	463	454	484	453
112	451	465	485	451	466	468	451	482	458	473	487	456	472	462	451	475	451
113	450	463	483	454	463	462	444	478	452	462	486	454	461	459	452	472	450
114	443	464	467	455	459	459	444	470	446	450	483	455	455	456	456	472	443
115	438	457	456	461	455	453	443	464	447	446	470	454	453	458	452	469	438
116	441	448	453	463	445	446	436	463	446	449	459	458	455	458	452	467	441
117	446	448	454	463	440	443	435	460	441	454	453	464	459	455	450	459	446
118	455	452	452	465	439	439	440	458	445	454	454	467	456	454	453	452	455
119	463	445	452	462	442	435	441	455	448	455	457	460	453	458	465	458	463
120	460	445	457	461	446	437	446	453	454	456	452	452	461	461	469	468	460
121	451	440	452	459	449	439	454	455	462	460	453	456	461	462	463	461	451
122	448	433	447	462	441	436	450	457	463	458	459	466	456	460	458	457	448
123	444	431	443	458	433	433	441	447	448	449	462	465	446	450	455	464	444
124	448	433	442	455	434	429	438	442	439	438	456	457	441	440	454	468	448

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125	446	435	445	449	438	430	448	451	441	434	446	448	433	437	454	468	446
126	432	430	444	439	439	442	460	464	447	431	443	441	437	443	444	454	432
127	416	419	429	431	434	442	459	472	451	438	450	445	441	441	430	438	416
128	399	407	414	415	420	431	446	471	442	438	455	450	435	433	415	418	399
129	387	395	402	395	402	418	424	458	427	435	446	445	429	416	400	405	387
130	376	382	386	380	384	395	402	434	414	428	430	423	406	395	391	392	376
131	369	373	372	373	370	378	389	416	400	414	414	404	385	380	387	379	369
132	355	359	363	366	358	368	382	398	388	395	396	388	370	371	377	368	355
133	343	347	355	356	347	359	375	384	376	382	380	376	361	358	362	356	343
134	336	341	349	349	339	347	360	373	359	367	371	367	349	345	352	348	336
135	333	340	347	341	334	337	348	365	347	352	361	356	340	337	349	348	333
136	333	340	346	337	332	332	344	358	342	342	353	348	335	334	348	348	333
137	330	341	346	340	332	331	342	354	339	336	346	344	333	336	344	347	330
138	330	339	347	342	331	332	342	354	336	331	342	341	331	336	343	344	330
139	334	340	350	345	331	332	341	351	333	331	345	341	329	333	346	345	334
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141	335	343	352	352	336	334	347	348	333	329	344	347	330	333	351	348	335
142	338	344	358	355	340	338	349	348	335	332	343	349	334	337	354	350	338
143	339	344	361	353	345	343	350	350	336	340	347	348	338	340	356	353	339
144	339	344	361	348	346	344	352	353	339	343	352	349	342	343	356	355	339
145	338	343	361	346	346	344	351	356	340	345	353	348	345	346	353	355	338
146	336	342	359	344	347	343	348	356	339	344	354	346	345	346	350	352	336
147	334	339	353	341	346	342	346	353	338	342	354	344	344	343	347	350	334
148	330	331	349	340	341	339	344	350	336	338	352	344	338	341	344	347	330
149	327	325	347	339	336	337	343	346	333	335	350	344	338	335	341	342	327
150	319	318	343	337	331	333	340	343	329	332	348	345	333	328	339	336	319
151	310	313	336	333	326	326	333	339	323	327	341	343	326	325	335	331	310
152	303	310	332	328	320	318	328	334	315	319	337	334	319	320	330	329	303
153	302	306	328	323	315	314	325	328	308	314	330	329	312	314	327	327	302
154	303	302	324	320	310	311	320	323	304	308	324	327	307	308	323	324	303
155	300	298	320	317	305	304	316	317	301	302	320	322	304	304	320	321	300
156	294	296	318	315	301	300	313	312	299	299	315	318	299	301	317	315	294

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157	291	293	315	311	298	298	310	310	296	296	308	316	296	299	316	311	291
158	289	291	314	300	294	297	307	310	293	293	304	315	293	296	314	311	289
159	287	289	313	300	292	295	303	308	287	288	302	312	289	294	314	305	287
160	286	290	312	297	291	292	301	308	286	283	296	301	286	294	312	303	286
161	288	293	312	291	292	291	299	308	287	278	286	298	288	295	307	300	288
162	286	294	314	287	280	292	299	306	292	269	286	299	288	293	305	291	286
163	290	300	304	297	285	281	297	302	291	267	286	301	288	288	305	290	290
164	296	292	296	306	295	293	293	296	275	275	288	305	293	289	302	297	296
165	294	291	299	307	288	291	290	296	280	287	295	307	296	290	287	300	294
166	287	289	312	306	279	278	284	285	274	277	294	306	293	289	286	294	287
167	284	291	314	308	284	285	281	293	278	282	293	305	278	289	260	293	284
168	289	284	314	309	295	291	290	289	275	280	295	305	285	279	264	287	289
169	273	279	307	298	289	291	276	291	283	281	286	306	293	280	283	270	273
170	259	265	276	280	261	258	257	271	277	252	275	290	268	256	264	264	259
171	250	252	255	259	252	248	250	253	255	250	257	266	248	244	247	251	250
172	246	241	243	246	243	243	235	239	239	245	242	247	241	232	234	235	246
173	243	229	230	234	230	232	229	223	226	233	238	232	239	224	222	224	243
174	229	215	216	222	221	222	227	216	217	222	236	220	231	216	213	216	229
175	218	205	204	220	209	211	214	206	205	211	227	210	218	204	202	213	218
176	208	195	194	218	200	200	206	204	198	202	215	208	208	192	192	207	208
177	189	185	185	197	191	191	192	197	185	191	198	199	198	179	182	191	189
178	222	210	209	211	192	190	190	190	187	182	187	187	196	190	199	206	222
179	246	231	248	241	231	229	227	225	238	216	221	223	233	222	247	246	246
180	270	270	270	270	270	270	270	270	270	270	270	270	270	270	270	270	270

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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 *******