



Report No.: GZE160347-O2

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-8090M50-A

Representative (Tested) Model: LED-8090M50-A

Model Different :N/A

Test & Report By:

Jack Luo

Engineer: Jack Luo

Date: May.09,2016

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	May.09,2016
Test Report No.	GZE160347-O
Laboratory Contact Name	Tommy Liang

Product Information:

Organization Name	LIGHT EFFICIENT DESIGN		
Brand Name	N/A		
Model Number	LED-8090M50-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	

Electrical Measurements:	Integrating Sphere	Goniophotometer	
	Output	Output	
Input Wattage	--	114.5	W
Input Current	--	0.9765	A
Input Voltage (ac)	--	120.0	V
Power Factor	--	0.9771	
Off-State Power	--	0	W

Photometric Characteristics

Total Initial Lumen Output	--	11760	lm
Initial Lumen Efficacy	--	102.71	lm/w
Correlated color temperature / CCT	4915	--	K
Color rendering index / CRI	73.8	--	
R9 Value	0	--	
Duv	-0.0009	--	
Luminous Intensity Distribution			
Center beam candlepower (if applicable)	-----	4156	cd
Beam angle (if applicable)		113.2	°
Zonal lumens in the 0°-60° zone		83.8	%
Zonal lumens in the 60°-90° zone		16	%
Zonal lumens in the 90°-120° zone		0.1	%
Zonal lumens in the 120°-180° zone		0.1	%

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Test Specifications:	
Date of Receipt	: Apr.01,2016
Date of Test	: May.03,2016
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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1. Product Information:

Brand Name	N/A
Model Number	LED-8090M50-A
Luminaire Type	LED Lamp
Rated Voltage / Frequency	120~277 Vac, 50/60Hz
Nominal Power	120W
Rated Initial Lamp Lumen	--
Declared CCT	5000K
LED Manufacturer	N/A
LED Model	N/A
Sample Receipt Date	Apr.01,2016
Sample Number	GZE160347-O2(5000K)

Photo



2.1 Electrical, Photometric and Chromaticity Measurements (Refer to Work Instruction QD25)	IES LM-79 2008
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Test date	2016-05-03	Test Ambient:	25.2 °C
Test Orientation	As intended	Stabilization Time (min)	90
Model Number	LED-8090M50-A		

Electrical Measurement:

Sample No.	Voltage (Vac)	Frequency (Hz)	Current (A)	Power (W)	Power Factor	THD %
GZE160347	120.0	60	0.9765	114.5	0.9771	12.29
-O2	277.0	60	0.4815	120.2	0.9013	17.61

Sphere-Spectroradiometer Method:

Parameter	Result
Test Voltage (V)	120.0
Frequency (Hz)	60
Color Rendering Index (CRI)	73.8
R9	0
CCT (K)	4915
Chromaticity (x, y)	x=0.3473 y=0.3517
Chromaticity (u', v')	u'=0.2129 v'=0.4850
Duv	-0.0009

Special Color Rendering Indices			
R1	73	R9	0
R2	78	R10	45
R3	80	R11	72
R4	75	R12	44
R5	72	R13	73
R6	68	R14	88
R7	82	R15	69
R8	63	--	--

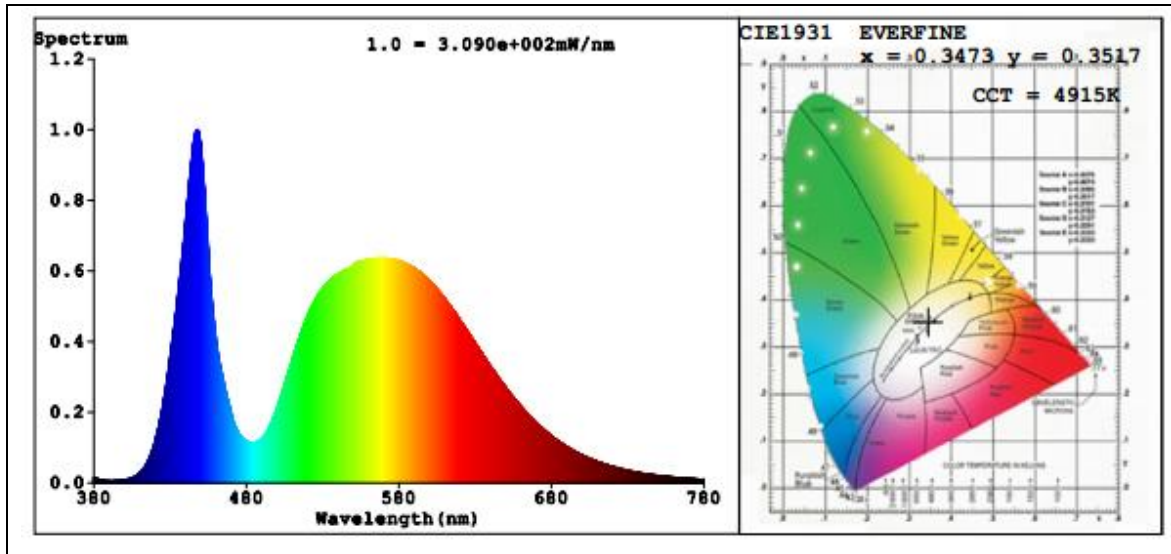
Goniophotometer Method :

Parameter	Result
Test Voltage (V)	120.0
Frequency (Hz)	60
Total Luminous (lm)	11760
Luminous Efficacy (lm/W)	102.71
Beam Angle°	113.2
Center Beam Candle Power (cd)	4156

Goniophotometer Methodn :

Parameter	Result
Test Voltage (V)	277.0
Frequency (Hz)	60
Total Luminous (lm)	12393
Luminous Efficacy (lm/W)	103.10

Spectral Power Distribution & Chromaticity Diagram



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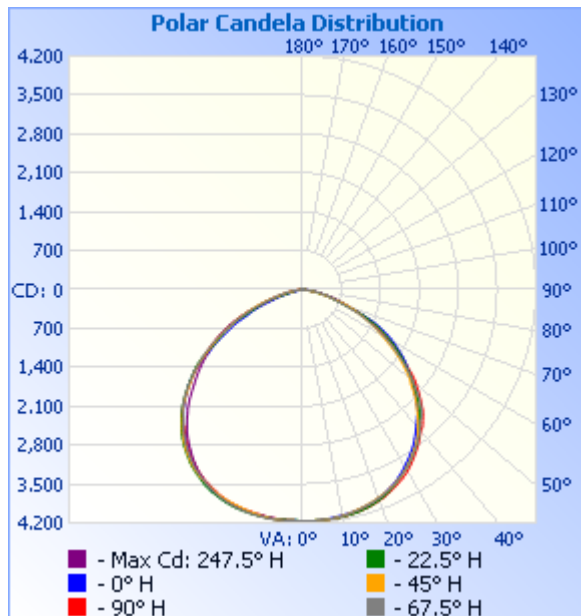
Tel: 8620-3229 0320 Fax: 8620-32290422 <http://www.standard-tech.com>

Zonal Lumen Tabulation

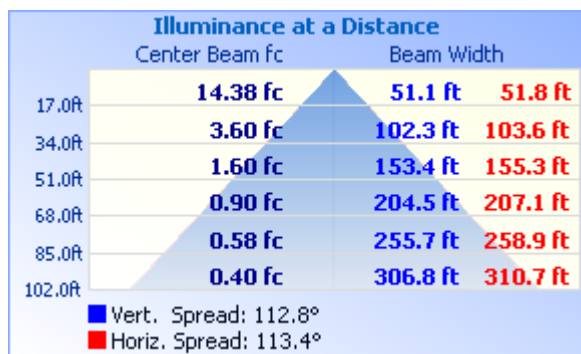
Zonal Lumen Summary		
Zone	Lumens	% Luminaire
0-30	3,359.9	28.6%
0-40	5,581.8	47.5%
0-60	9,851.6	83.8%
60-90	1,880.3	16%
70-100	600.0	5.1%
90-120	6.2	0.1%
0-90	11,732.0	99.8%
90-180	26.2	0.2%
0-180	11,758.2	100%

Lumens Per Zone					
Zone	Lumens	% Total	Zone	Lumens	% Total
0-10	396.4	3.4%	90-100	1.0	0%
10-20	1,158.1	9.8%	100-110	2.1	0%
20-30	1,805.3	15.4%	110-120	3.1	0%
30-40	2,221.9	18.9%	120-130	4.3	0%
40-50	2,304.5	19.6%	130-140	4.7	0%
50-60	1,965.4	16.7%	140-150	4.5	0%
60-70	1,281.4	10.9%	150-160	3.5	0%
70-80	509.7	4.3%	160-170	2.1	0%
80-90	89.3	0.8%	170-180	0.8	0%

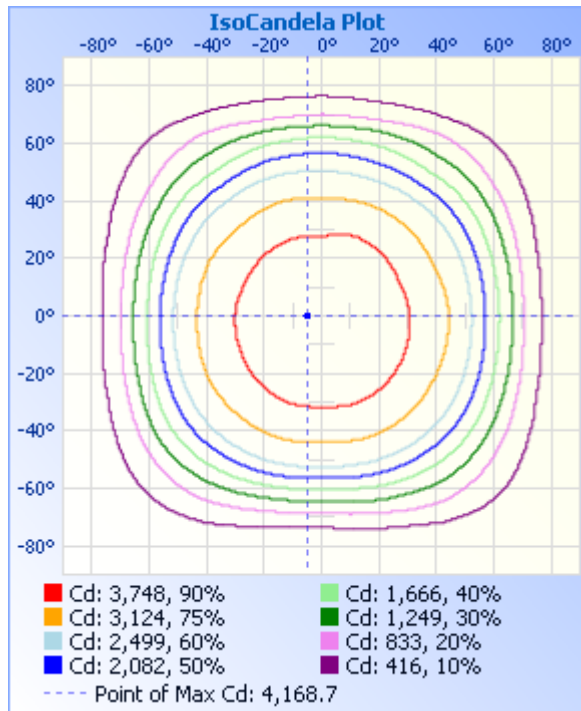
Photometric Data



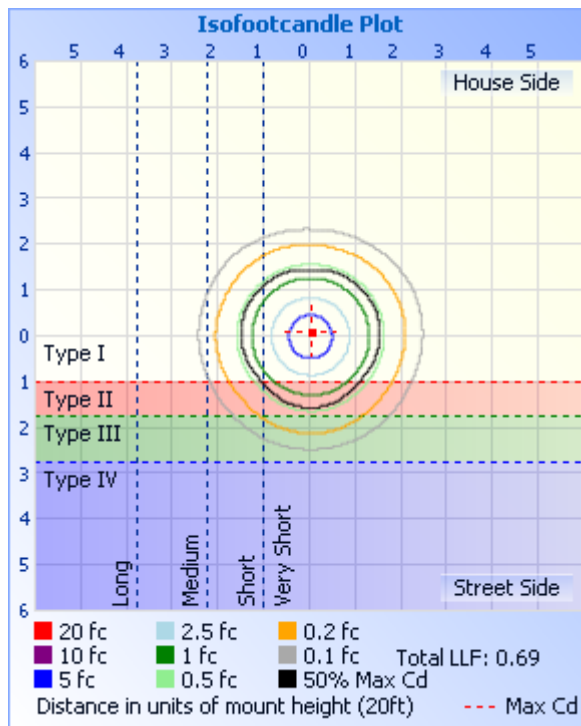
Illuminance Plots



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	4156	4156	4156	4156	4156	4156	4156	4156	4156	4156	4156	4156	4156	4156	4156	4156	4156
1	4162	4159	4159	4160	4157	4155	4153	4158	4156	4155	4156	4161	4158	4159	4157	4162	4162
2	4160	4159	4158	4161	4159	4158	4158	4156	4155	4153	4157	4163	4155	4161	4157	4165	4160
3	4162	4159	4159	4162	4163	4159	4158	4156	4154	4154	4158	4165	4159	4166	4159	4165	4162
4	4161	4162	4165	4162	4166	4154	4160	4161	4156	4155	4161	4169	4158	4166	4159	4164	4161
5	4157	4163	4163	4163	4165	4149	4161	4162	4154	4153	4163	4168	4155	4169	4158	4167	4157
6	4151	4158	4160	4161	4159	4142	4165	4163	4154	4158	4160	4164	4151	4164	4153	4161	4151
7	4144	4159	4157	4156	4157	4135	4162	4160	4150	4161	4159	4165	4144	4164	4146	4160	4144
8	4136	4153	4150	4152	4156	4130	4162	4157	4146	4156	4155	4166	4139	4156	4139	4156	4136
9	4128	4153	4141	4144	4151	4125	4156	4154	4140	4153	4147	4159	4134	4154	4132	4148	4128
10	4124	4148	4132	4139	4147	4114	4155	4146	4136	4149	4140	4155	4125	4144	4124	4143	4124
11	4115	4141	4121	4129	4144	4104	4144	4139	4132	4146	4128	4150	4118	4139	4119	4136	4115
12	4106	4138	4107	4117	4137	4097	4141	4131	4125	4140	4114	4143	4112	4129	4106	4129	4106
13	4095	4130	4095	4104	4127	4090	4132	4128	4120	4135	4109	4135	4102	4119	4101	4126	4095
14	4087	4124	4079	4091	4121	4079	4122	4118	4116	4127	4094	4129	4095	4108	4088	4117	4087
15	4072	4110	4067	4076	4110	4069	4112	4113	4107	4124	4084	4118	4088	4099	4077	4109	4072
16	4058	4099	4052	4058	4099	4058	4097	4101	4097	4113	4070	4107	4079	4086	4065	4099	4058
17	4043	4086	4036	4044	4087	4048	4091	4089	4089	4104	4058	4097	4068	4076	4054	4088	4043
18	4027	4070	4019	4029	4074	4036	4076	4082	4079	4094	4048	4083	4052	4061	4039	4075	4027
19	4010	4050	4003	4010	4056	4027	4069	4066	4067	4082	4034	4068	4040	4043	4026	4059	4010
20	3990	4030	3983	3991	4038	4010	4059	4054	4053	4066	4022	4051	4023	4022	4009	4043	3990
21	3968	4007	3961	3974	4019	3995	4044	4035	4037	4047	4007	4030	4004	4000	3987	4025	3968
22	3943	3984	3942	3952	3999	3976	4030	4023	4018	4031	3989	4009	3982	3974	3967	4002	3943
23	3916	3956	3922	3933	3972	3958	4010	4002	3998	4010	3972	3985	3955	3950	3946	3980	3916
24	3888	3926	3894	3907	3945	3939	3985	3983	3980	3993	3948	3960	3931	3921	3919	3953	3888
25	3860	3891	3871	3882	3920	3912	3963	3958	3948	3972	3925	3934	3906	3892	3897	3925	3860
26	3831	3856	3845	3850	3892	3889	3937	3935	3921	3948	3905	3904	3879	3856	3868	3893	3831
27	3793	3823	3818	3820	3869	3860	3910	3904	3896	3916	3879	3873	3853	3823	3840	3863	3793
28	3757	3788	3789	3789	3839	3831	3878	3871	3862	3884	3859	3845	3827	3786	3809	3834	3757

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29	3714	3754	3753	3758	3806	3800	3841	3840	3830	3853	3831	3814	3794	3755	3777	3797	3714
30	3673	3719	3718	3727	3773	3773	3803	3809	3796	3820	3802	3781	3762	3720	3739	3761	3673
31	3630	3681	3679	3694	3729	3742	3763	3780	3759	3785	3772	3750	3722	3686	3700	3717	3630
32	3591	3640	3639	3652	3689	3711	3723	3746	3717	3751	3737	3709	3681	3642	3659	3671	3591
33	3546	3601	3594	3612	3643	3673	3685	3711	3679	3714	3696	3667	3637	3599	3613	3622	3546
34	3501	3557	3552	3568	3601	3630	3639	3672	3637	3669	3653	3624	3597	3548	3569	3572	3501
35	3456	3515	3508	3525	3557	3586	3593	3635	3595	3626	3608	3576	3551	3499	3523	3519	3456
36	3405	3475	3463	3479	3512	3539	3549	3588	3549	3581	3566	3531	3508	3446	3471	3470	3405
37	3351	3429	3412	3437	3464	3492	3504	3542	3501	3536	3519	3483	3458	3397	3421	3418	3351
38	3296	3381	3356	3388	3412	3443	3459	3495	3446	3490	3469	3433	3408	3346	3367	3363	3296
39	3237	3326	3297	3342	3359	3392	3410	3444	3394	3438	3419	3380	3351	3288	3308	3304	3237
40	3186	3267	3229	3290	3303	3335	3361	3385	3335	3386	3363	3320	3297	3233	3244	3235	3186
41	3133	3200	3164	3231	3284	3280	3306	3328	3277	3329	3304	3258	3246	3171	3176	3171	3133
42	3080	3140	3095	3171	3228	3237	3249	3266	3213	3265	3238	3197	3230	3110	3113	3105	3080
43	3039	3078	3029	3137	3172	3194	3179	3201	3149	3201	3173	3135	3206	3052	3045	3036	3039
44	2975	3028	2962	3094	3115	3152	3110	3135	3085	3137	3108	3100	3136	3032	2973	2976	2975
45	2906	2959	2896	3021	3056	3079	3040	3069	3031	3069	3039	3062	3057	3012	2905	2901	2906
46	2838	2889	2823	2950	2976	3000	2968	3009	2962	2999	2970	2995	2983	2924	2831	2824	2838
47	2767	2811	2746	2873	2901	2925	2892	2943	2891	2928	2898	2923	2905	2843	2748	2741	2767
48	2703	2733	2665	2781	2825	2842	2814	2873	2821	2848	2820	2853	2831	2761	2663	2659	2703
49	2638	2660	2581	2686	2749	2756	2730	2798	2750	2765	2740	2765	2745	2668	2575	2585	2638
50	2569	2586	2530	2604	2673	2670	2646	2713	2680	2683	2652	2683	2662	2586	2491	2515	2569
51	2500	2512	2455	2518	2600	2594	2579	2633	2606	2606	2576	2595	2587	2502	2440	2442	2500
52	2433	2437	2360	2435	2512	2518	2528	2554	2527	2530	2502	2512	2497	2421	2354	2371	2433
53	2367	2358	2276	2351	2415	2444	2448	2473	2440	2449	2430	2434	2411	2336	2252	2297	2367
54	2306	2282	2188	2262	2310	2372	2341	2387	2318	2368	2332	2355	2314	2254	2158	2224	2306
55	2242	2203	2100	2158	2222	2277	2248	2294	2187	2282	2234	2264	2226	2166	2075	2149	2242
56	2176	2130	2010	2059	2134	2173	2149	2171	2049	2169	2134	2174	2139	2075	1989	2078	2176
57	2102	2057	1921	1972	2059	2081	2054	2038	1961	2042	2038	2085	2061	1982	1897	2006	2102
58	2029	1982	1830	1878	1972	1993	1958	1909	1872	1906	1946	1986	1982	1891	1805	1934	2029
59	1956	1900	1733	1793	1875	1920	1869	1814	1764	1806	1854	1901	1899	1809	1712	1856	1956
60	1884	1815	1650	1704	1779	1844	1776	1726	1642	1727	1764	1810	1810	1718	1629	1781	1884

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61	1811	1728	1568	1613	1689	1750	1682	1623	1539	1648	1673	1715	1724	1631	1546	1701	1811
62	1728	1645	1486	1521	1591	1652	1598	1509	1446	1571	1582	1615	1635	1544	1463	1619	1728
63	1641	1562	1409	1429	1504	1557	1508	1396	1365	1487	1489	1521	1547	1457	1383	1537	1641
64	1546	1480	1333	1332	1426	1460	1409	1297	1249	1402	1408	1422	1458	1359	1305	1455	1546
65	1450	1381	1255	1238	1347	1368	1304	1211	1121	1289	1326	1326	1375	1263	1227	1360	1450
66	1328	1280	1178	1152	1255	1282	1198	1128	1039	1143	1246	1231	1279	1173	1148	1264	1328
67	1195	1170	1108	1070	1153	1194	1099	1029	968	1039	1165	1143	1171	1082	1071	1161	1195
68	1055	1054	1035	972	1052	1092	1022	912	874	958	1081	1051	1056	980	1002	1043	1055
69	960	933	966	878	944	986	946	819	773	882	995	955	939	872	930	925	960
70	876	824	893	781	861	881	868	746	657	806	909	864	848	761	855	810	876
71	801	738	815	696	795	768	792	666	563	738	828	771	771	677	781	719	801
72	733	660	734	635	723	687	720	559	501	663	747	694	698	615	699	642	733
73	671	594	643	579	654	626	645	490	424	569	665	624	626	557	597	571	671
74	613	541	546	531	601	564	568	428	326	465	580	563	563	503	488	509	613
75	541	489	473	499	551	507	488	376	271	366	497	516	512	462	413	447	541
76	458	437	417	456	462	456	428	331	232	294	430	494	418	403	364	397	458
77	405	373	357	386	383	395	382	293	164	253	385	409	341	332	319	349	405
78	354	318	310	343	351	326	326	261	127	230	340	342	310	280	289	306	354
79	312	274	259	329	346	293	278	224	76	198	304	313	301	262	217	266	312
80	256	226	201	298	296	286	239	171	50	163	257	301	259	241	169	212	256
81	220	190	178	218	207	245	219	129	26	138	191	270	184	161	160	176	220
82	173	152	149	164	151	178	195	101	16	113	170	185	149	125	121	146	173
83	141	116	100	129	137	138	160	79	9	91	163	158	140	108	82	111	141
84	110	89	69	95	104	126	105	65	4	72	124	139	98	78	58	84	110
85	90	69	49	75	82	99	79	50	2	50	97	99	78	63	37	64	90
86	73	53	32	50	65	86	67	38	1	36	83	82	57	36	24	50	73
87	61	42	20	26	44	59	44	25	1	22	47	54	34	18	15	40	61
88	49	33	14	8	9	12	16	10	0	7	13	9	4	4	11	32	49
89	37	26	10	3	0	0	1	1	0	0	0	0	1	2	8	24	37
90	25	13	6	2	0	0	0	0	0	0	0	0	0	1	3	9	25
91	1	1	2	1	0	0	0	0	0	0	0	0	0	0	1	0	1
92	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

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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>

93	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
94	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0
95	0	0	0	0	0	1	2	0	0	0	3	3	1	1	0	0
96	0	0	0	1	2	2	2	0	0	1	3	3	2	1	0	0
97	0	0	0	2	2	2	2	1	1	1	3	3	2	2	0	0
98	0	0	0	3	2	2	2	1	1	1	2	3	2	3	1	0
99	0	0	1	3	2	2	2	1	1	1	2	2	2	3	2	0
100	0	0	2	3	1	2	2	1	1	1	2	2	2	3	3	0
101	0	0	3	3	1	2	2	1	1	1	2	2	2	3	3	1
102	0	1	4	2	1	2	2	1	1	1	2	2	2	2	4	1
103	0	1	4	2	1	2	2	1	1	1	2	2	2	3	4	2
104	1	2	3	3	2	2	2	1	1	1	2	2	2	3	4	2
105	1	2	3	3	2	2	2	2	1	2	2	2	2	3	4	2
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123	5	5	4	6	4	4	4	4	4	4	4	4	5	6	4	5
124	5	5	5	6	4	4	4	4	4	4	4	4	5	7	4	5

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125	5	5	5	7	4	4	4	4	5	4	4	4	5	7	4	5	5
126	6	5	5	7	5	4	4	4	5	4	4	4	6	7	4	5	6
127	6	6	5	7	5	5	4	4	5	5	4	4	6	7	5	6	6
128	6	6	5	7	5	5	4	4	5	5	4	4	6	7	5	6	6
129	6	6	7	7	5	5	4	5	5	5	4	4	6	7	6	6	6
130	6	6	8	7	5	5	4	5	5	5	4	5	6	7	7	6	6
131	6	6	8	7	5	5	4	5	5	5	5	5	6	7	8	6	6
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134	6	6	8	7	6	5	4	5	6	5	5	5	6	7	8	6	6
135	6	7	8	7	6	5	5	5	6	6	5	5	6	7	8	6	6
136	6	7	8	7	6	5	5	5	6	6	5	5	6	7	8	7	6
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138	7	7	8	7	6	5	5	5	6	6	5	6	6	7	8	7	7
139	8	7	8	7	6	6	5	5	6	6	5	6	6	7	8	7	8
140	7	10	8	7	6	6	5	5	6	6	5	6	6	7	8	10	7
141	7	10	8	7	6	6	5	6	6	6	5	6	6	7	8	10	7
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143	9	11	8	7	7	6	5	6	6	6	6	6	6	7	8	10	9
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145	9	11	8	7	7	6	5	6	6	7	6	6	7	7	8	10	9
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147	10	11	8	7	7	6	6	6	7	7	7	6	7	7	8	11	10
148	10	11	8	7	7	7	6	6	7	7	7	6	7	7	8	11	10
149	10	11	8	7	7	7	6	6	7	7	7	6	7	7	8	11	10
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154	10	10	8	7	6	7	6	7	7	7	7	6	6	7	9	10	10
155	10	10	9	7	6	7	6	7	7	7	7	6	6	7	9	10	10
156	10	10	9	7	6	7	6	7	7	7	7	6	6	7	9	10	10

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157	9	10	9	7	6	7	6	7	7	7	7	6	5	7	9	10	9
158	9	10	9	7	6	7	6	7	7	7	7	6	5	7	9	10	9
159	9	10	9	7	6	6	6	7	7	7	7	6	5	7	9	10	9
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161	9	10	9	7	6	6	6	7	7	7	7	6	6	7	9	10	9
162	9	10	9	7	6	6	6	7	6	7	7	6	6	7	9	10	9
163	9	9	9	7	6	6	6	7	6	7	7	6	6	7	9	10	9
164	9	9	8	7	6	6	7	7	6	7	7	6	6	7	9	9	9
165	8	9	9	7	6	7	7	7	6	7	7	6	6	7	9	9	8
166	8	9	9	7	7	7	7	7	6	7	7	7	6	7	8	9	8
167	8	9	9	7	7	7	7	7	7	7	7	7	7	7	8	9	8
168	8	9	9	7	7	7	7	8	8	8	8	8	7	7	9	9	8
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172	9	9	9	7	8	8	8	9	9	10	8	9	7	7	9	9	9
173	9	9	9	8	8	8	8	9	9	10	8	9	7	7	9	9	9
174	9	9	9	8	8	8	8	9	9	10	9	9	7	7	9	9	9
175	10	9	9	8	8	8	8	9	9	10	9	9	8	8	9	9	10
176	10	9	9	8	8	8	8	9	9	10	9	9	8	8	9	9	10
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178	10	9	9	8	7	7	8	8	8	9	9	9	8	8	9	9	10
179	9	9	9	8	7	7	8	8	8	9	9	9	7	8	9	8	9
180	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9

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 *******