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-8081E40

Representative (Tested) Model: LED-8081E40

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.

NVLAP LAB CODE 201011-0

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-S2
Laboratory Contact Name	Tommy Liang

Product Information:

Organization Name	LIGHT EFFICIENT DESIGN	
Brand Name	N/A	
Model Number	LED-8081E40	
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 Output**	**Goniophotometer Output**	
Input Wattage	--	31.79	W
Input Current	--	0.2683	A
Input Voltage (ac)	--	120.0	V
Power Factor	--	0.9874	
Off-State Power	--	0	W
Photometric Characteristics			
Total Initial Lumen Output	--	3509.3	lm
Initial Lumen Efficacy	--	110.39	lm/w
Correlated color temperature / CCT	3942	--	K
Color rendering index / CRI	83.5	--	
R9 Value	11	--	
Duv	0.0007	--	
Luminous Intensity Distribution			
Center beam candlepower (if applicable)	-----	1078	cd
Beam angle (if applicable)		111.3	°
Zonal lumens in the 0°-60° zone		67.9	%
Zonal lumens in the 60°-90° zone		25.3	%
Zonal lumens in the 90°-120° zone		5.9	%
Zonal lumens in the 120°-180° zone		0.9	%

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° C ± 1° 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° C ± 1° 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.

1. Product Information:

Brand Name	N/A
Model Number	LED-8081E40
Luminaire Type	LED Lamp
Rated Voltage / Frequency	120~277 Vac, 50/60Hz
Nominal Power	30W
Rated Initial Lamp Lumen	--
Declared CCT	4000K
LED Manufacturer	N/A
LED Model	N/A
Sample Receipt Date	Apr.01,2016
Sample Number	GZE160347-S2(4000K)
Photo	

2.1 Electrical, Photometric and Chromaticity Measurements *(Refer to Work Instruction QD25)*	**IES LM-79 2008**

Test date	2016-05-03	**Test Ambient:**	25.2 °C
Test Orientation	As intended	**Stabilization Time (min)**	90
Model Number	LED-8081E40		

Electrical Measurement:

Sample No.	Voltage (Vac)	Frequency (Hz)	Current (A)	Power (W)	Power Factor	THD %
GZE160347	120.0	60	0.2683	31.79	0.9874	7.47
-S2	277.0	60	0.1279	31.92	0.9010	9.85

Sphere-Spectroradiometer Method:

Parameter	Result
Test Voltage (V)	120.0
Frequency (Hz)	60
Color Rendering Index (CRI)	83.5
R9	11
CCT (K)	3942
Chromaticity (x, y)	x=0.3836 y=0.3802
Chromaticity (u', v')	u'=0.2258 v'=0.5036
Duv	0.0007

Special Color Rendering Indices			
R1	82	R9	11
R2	90	R10	76
R3	96	R11	80
R4	81	R12	63
R5	82	R13	84
R6	86	R14	98
R7	86	R15	76
R8	65	--	--

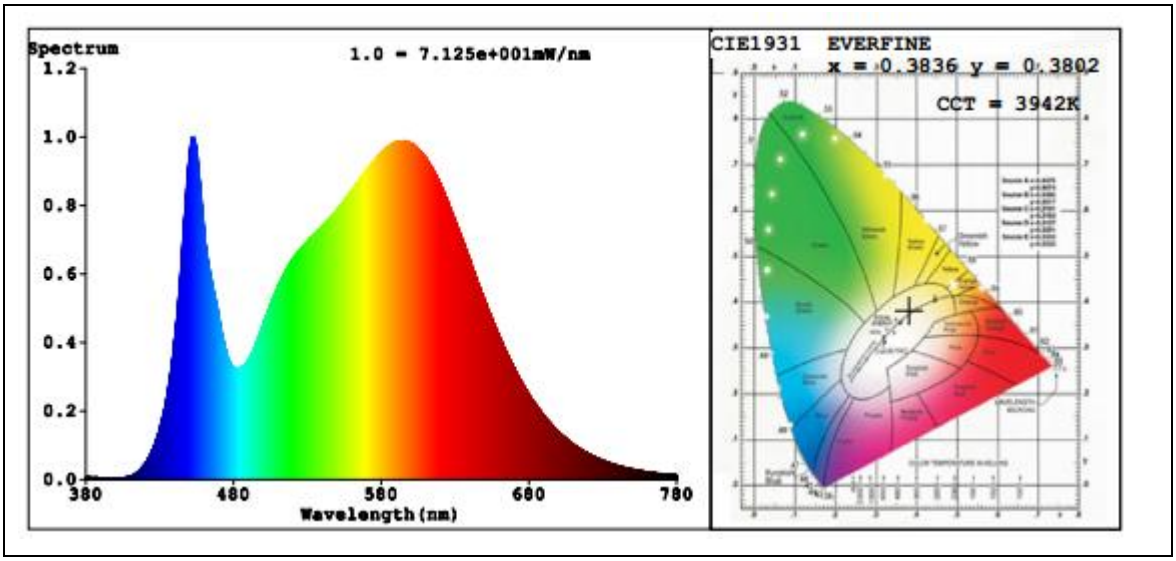
Goniophotometer Method :

Parameter	Result
Test Voltage (V)	120.0
Frequency (Hz)	60
Total Luminous (lm)	3509.3
Luminous Efficacy (lm/W)	110.39
Beam Angle°	111.3
Center Beam Candle Power (cd)	1078

Goniophotometer Methodn :

Parameter	Result
Test Voltage (V)	277.0
Frequency (Hz)	60
Total Luminous (lm)	3504.8
Luminous Efficacy (lm/W)	109.80

Spectral Power Distribution & Chromaticity Diagram



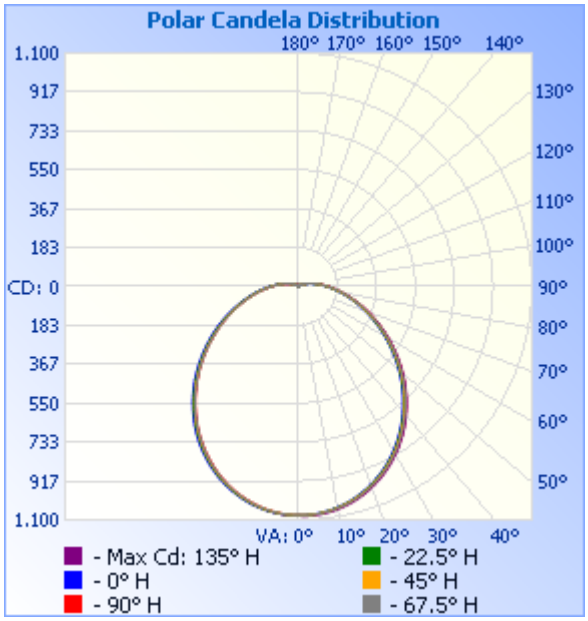
NVLAP LAB CODE 201011-0

Zonal Lumen Tabulation

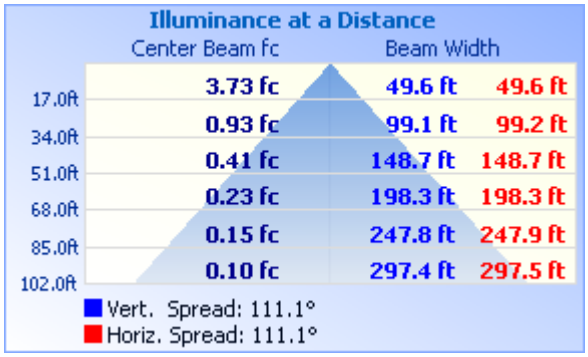
Zonal Lumen Summary		
Zone	Lumens	% Luminaire
0-30	830.8	23.7%
0-40	1,354.0	38.6%
0-60	2,383.6	67.9%
60-90	887.4	25.3%
70-100	602.3	17.2%
90-120	206.2	5.9%
0-90	3,271.1	93.2%
90-180	238.1	6.8%
0-180	3,509.1	100%

Lumens Per Zone					
Zone	Lumens	% Total	Zone	Lumens	% Total
0-10	101.9	2.9%	90-100	115.1	3.3%
10-20	290.9	8.3%	100-110	61.5	1.8%
20-30	438.0	12.5%	110-120	29.6	0.8%
30-40	523.2	14.9%	120-130	14.3	0.4%
40-50	538.7	15.4%	130-140	8.5	0.2%
50-60	490.9	14.0%	140-150	5.3	0.2%
60-70	400.3	11.4%	150-160	2.7	0.1%
70-80	293.4	8.4%	160-170	0.9	0%
80-90	193.7	5.5%	170-180	0.2	0%

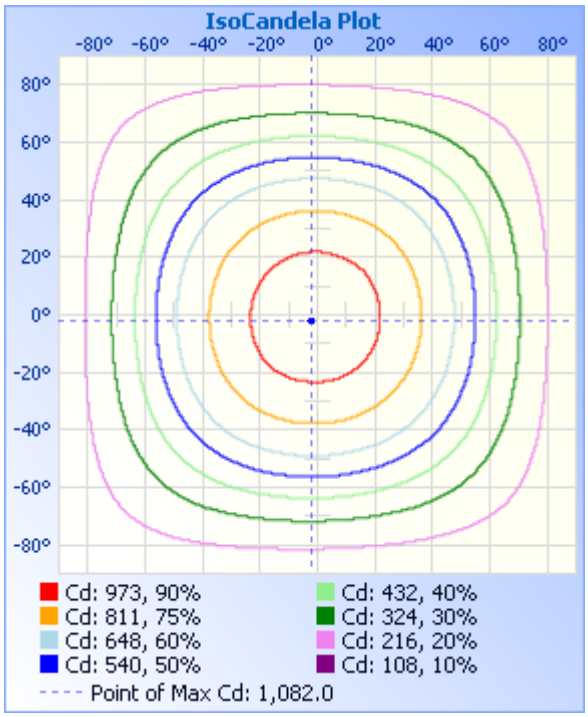
Photometric Data



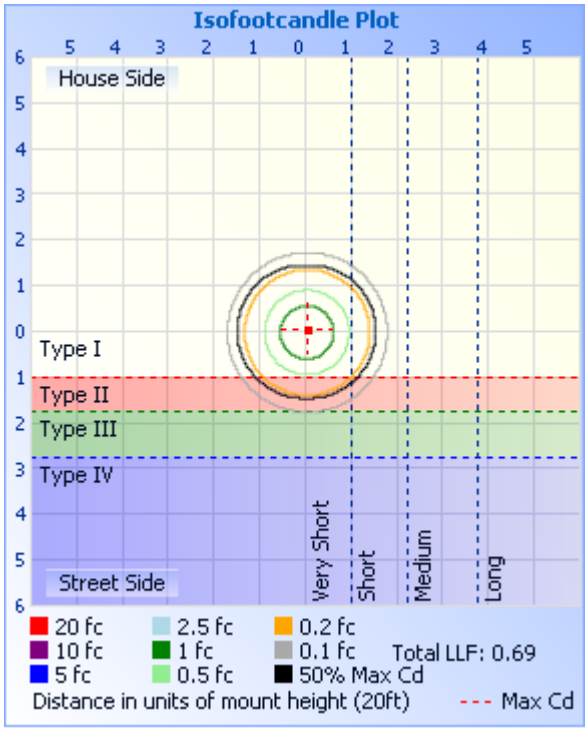
Illuminance Plots



ISOCANDELA DIAGRAM



ISOLUX DIAGRAM



NVLAP LAB CODE 201011-0

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	1078	1078	1078	1078	1078	1078	1078	1078	1078	1078	1078	1078	1078	1078	1078	1078	1078
1	1077	1078	1077	1078	1078	1078	**1082**	1078	1078	1078	1077	1077	1077	1077	1081	1077	1077
2	1077	1077	1077	1078	1078	1078	**1082**	1078	1077	1077	1076	1076	1076	1076	1080	1076	1077
3	1076	1076	1076	1077	1077	1077	1081	1077	1076	1076	1075	1075	1074	1074	1078	1075	1076
4	1074	1075	1075	1076	1076	1076	1080	1076	1075	1074	1073	1073	1073	1072	1076	1073	1074
5	1072	1073	1073	1074	1075	1075	1079	1074	1074	1072	1071	1071	1070	1070	1074	1071	1072
6	1069	1070	1071	1072	1073	1074	1077	1072	1071	1070	1069	1068	1067	1067	1071	1068	1069
7	1066	1068	1068	1070	1071	1071	1075	1070	1069	1067	1066	1065	1064	1064	1068	1065	1066
8	1063	1065	1066	1067	1068	1069	1072	1067	1066	1064	1062	1062	1061	1060	1065	1062	1063
9	1060	1061	1062	1064	1065	1065	1069	1064	1062	1061	1058	1057	1057	1056	1060	1057	1060
10	1056	1057	1058	1060	1062	1062	1066	1060	1059	1057	1054	1053	1052	1052	1056	1053	1056
11	1051	1053	1054	1056	1058	1058	1062	1056	1054	1052	1050	1049	1047	1047	1051	1049	1051
12	1046	1048	1050	1052	1053	1054	1057	1052	1050	1048	1045	1043	1042	1042	1046	1043	1046
13	1041	1043	1044	1047	1049	1049	1053	1047	1045	1042	1039	1038	1036	1036	1040	1038	1041
14	1035	1037	1039	1042	1044	1044	1047	1041	1039	1037	1033	1032	1030	1030	1034	1032	1035
15	1029	1031	1033	1036	1038	1039	1042	1036	1034	1031	1028	1025	1024	1024	1028	1026	1029
16	1022	1025	1027	1030	1032	1033	1036	1030	1027	1024	1021	1019	1016	1017	1021	1019	1022
17	1015	1018	1021	1024	1026	1027	1030	1024	1021	1017	1014	1011	1010	1010	1014	1012	1015
18	1008	1011	1014	1017	1019	1020	1023	1016	1014	1010	1006	1004	1002	1002	1006	1005	1008
19	1000	1003	1006	1009	1012	1013	1016	1009	1006	1002	999	996	994	994	998	997	1000
20	992	996	998	1002	1005	1006	1008	1002	999	994	990	988	986	986	990	989	992
21	984	987	990	994	997	998	1000	994	990	986	982	979	977	977	981	980	984
22	975	978	982	986	989	989	992	986	982	977	973	970	968	968	973	971	975
23	966	970	973	977	979	981	984	977	973	968	964	961	959	958	963	962	966
24	956	960	964	968	971	972	975	968	964	959	954	952	949	949	953	952	956
25	946	950	954	959	962	963	965	958	954	949	944	941	939	939	943	943	946
26	936	940	944	948	952	953	956	949	944	939	934	931	928	929	933	932	936
27	926	930	934	938	942	943	946	939	934	928	924	921	918	918	923	922	926
28	915	919	924	928	932	933	935	928	924	918	913	910	907	907	912	911	915

29	904	908	913	917	921	923	925	917	913	907	902	898	896	896	900	900	904
30	892	897	902	906	910	912	914	906	902	895	890	887	884	884	889	888	892
31	881	885	890	895	899	901	902	895	890	884	878	875	872	872	877	876	881
32	869	873	878	883	888	889	891	883	878	872	866	863	860	860	865	864	869
33	857	861	866	871	876	877	879	871	866	860	854	850	848	847	852	852	857
34	844	849	854	859	864	865	867	859	854	847	841	838	835	835	840	839	844
35	831	836	841	847	851	852	854	847	841	834	828	825	822	822	827	826	831
36	818	823	828	834	839	840	842	834	828	821	815	812	809	810	813	813	818
37	805	810	815	821	826	827	829	821	815	808	802	798	796	796	800	800	805
38	792	797	802	807	813	814	815	808	802	795	789	785	782	783	787	787	792
39	778	783	789	794	799	801	802	795	788	781	775	771	769	769	773	773	778
40	764	769	775	780	785	787	788	781	775	767	761	757	754	755	759	759	764
41	750	755	761	767	772	773	775	768	761	753	747	743	740	741	745	745	750
42	736	741	747	752	758	759	761	753	747	739	733	728	726	726	731	731	736
43	721	727	733	738	743	745	746	739	732	724	718	714	712	712	716	716	721
44	707	712	718	724	729	731	732	725	718	710	703	699	697	698	702	702	707
45	692	698	704	710	715	716	717	710	704	695	689	685	683	683	687	687	692
46	677	683	689	695	700	701	703	696	689	680	674	670	668	668	672	673	677
47	663	669	674	680	685	687	688	681	674	666	659	655	653	654	657	658	663
48	648	654	660	665	671	672	673	666	659	651	644	640	638	639	642	643	648
49	633	639	645	650	655	657	658	651	644	635	629	625	623	624	627	628	633
50	618	624	630	635	641	642	643	636	629	620	614	610	609	609	612	613	618
51	603	608	615	620	625	627	628	621	614	605	599	595	593	594	597	598	603
52	588	593	599	605	610	612	612	606	599	590	583	580	578	578	582	583	588
53	573	578	584	590	595	596	598	591	584	575	568	565	563	564	567	568	573
54	558	563	569	575	580	581	582	576	569	560	553	550	548	549	552	553	558
55	543	548	554	560	565	566	567	561	554	545	538	535	534	534	536	538	543
56	528	533	539	545	550	551	552	546	539	530	523	520	519	519	522	523	528
57	513	519	524	530	535	536	537	531	524	515	508	505	504	504	507	508	513
58	498	503	509	515	520	521	522	515	509	500	493	490	489	489	492	493	498
59	484	489	495	500	505	506	507	501	494	486	479	475	475	475	477	478	484
60	469	474	480	485	490	491	492	486	480	471	464	461	460	461	463	464	469

61	455	460	466	471	475	477	477	472	465	457	450	446	446	446	448	450	455
62	441	445	451	456	461	462	462	457	451	442	436	433	432	432	434	435	441
63	426	432	437	442	446	447	448	442	436	428	422	418	418	418	420	422	426
64	412	417	422	427	432	433	433	428	422	414	407	404	404	404	406	407	412
65	398	403	409	413	418	419	419	414	409	400	394	391	390	391	393	394	398
66	385	390	395	399	404	405	405	400	395	386	380	377	377	377	379	380	385
67	372	376	381	386	390	391	391	387	381	373	367	364	364	364	366	367	372
68	358	363	368	372	376	377	378	373	368	360	354	351	351	350	353	354	358
69	345	350	355	359	363	364	364	360	355	347	340	338	338	338	340	341	345
70	333	337	342	346	350	351	351	347	342	334	328	325	325	325	327	329	333
71	320	325	329	333	337	338	338	334	329	322	316	313	313	313	315	316	320
72	308	312	316	321	324	325	325	322	317	309	303	301	301	301	303	304	308
73	296	300	304	308	314	313	313	309	304	297	291	289	289	289	291	292	296
74	285	288	292	296	300	301	301	297	292	286	280	277	278	278	279	281	285
75	273	277	281	285	287	288	289	285	280	274	268	266	266	266	268	269	273
76	262	266	270	273	276	277	277	274	269	263	257	255	256	256	257	258	262
77	251	255	258	262	265	266	265	262	258	252	247	244	245	245	246	247	251
78	240	244	248	251	253	254	255	251	247	241	236	234	234	234	236	237	240
79	230	233	237	240	243	244	244	241	237	231	226	224	224	224	225	227	230
80	220	224	227	230	232	233	233	230	226	221	216	214	214	214	215	217	220
81	210	214	217	220	222	223	223	220	217	211	206	204	205	205	206	207	210
82	201	204	207	210	212	213	213	210	207	201	197	195	195	195	196	198	201
83	192	195	198	201	202	204	204	201	198	193	188	186	186	186	187	189	192
84	182	186	189	191	194	194	194	192	189	184	180	177	177	177	179	180	182
85	174	177	180	182	184	185	185	183	180	175	171	169	169	169	170	171	174
86	165	168	171	174	176	177	177	174	171	167	163	161	160	161	162	163	165
87	157	160	163	165	167	168	168	166	163	158	155	153	152	152	153	155	157
88	149	152	155	157	159	160	160	158	155	151	147	145	145	145	146	147	149
89	142	144	147	149	151	152	152	150	147	143	140	138	138	137	139	140	142
90	135	137	139	142	143	144	144	142	140	136	133	131	130	130	131	133	135
91	128	130	132	134	136	137	137	135	133	129	126	124	123	124	125	126	128
92	121	123	126	127	129	130	130	128	126	122	120	118	117	117	118	119	121

93	114	117	119	121	122	123	123	121	119	116	113	111	111	111	112	112	114
94	108	110	112	114	116	117	117	115	113	110	110	105	104	104	105	106	108
95	102	104	106	108	110	111	110	109	107	104	101	100	99	99	99	101	102
96	96	98	100	102	104	105	105	103	101	98	96	94	93	93	94	95	96
97	91	93	95	96	98	99	99	97	95	93	90	89	88	88	88	89	91
98	86	87	89	91	93	93	93	92	90	88	85	84	83	83	83	84	86
99	81	82	84	86	88	88	88	87	85	83	80	79	78	78	79	79	81
100	76	78	79	81	83	83	83	82	80	78	76	75	74	73	74	75	76
101	72	73	75	76	78	78	78	77	76	73	71	70	69	69	70	71	72
102	67	69	70	72	73	74	74	73	71	69	67	66	65	65	65	66	67
103	63	65	66	67	69	70	69	68	67	65	63	62	61	61	62	62	63
104	59	61	62	63	65	65	65	64	63	61	59	58	57	57	58	58	59
105	56	57	58	59	61	61	61	60	59	57	56	55	54	53	54	55	56
106	52	53	54	55	57	57	57	56	55	54	52	51	50	50	51	51	52
107	49	50	51	52	54	54	54	53	52	50	49	48	47	47	47	48	49
108	46	47	48	49	50	50	50	50	48	47	46	45	44	44	44	45	46
109	43	44	45	46	47	47	47	46	45	44	43	42	41	41	41	42	43
110	40	41	42	43	44	44	44	43	42	41	40	39	38	38	38	39	40
111	37	38	39	40	41	41	41	40	40	38	37	36	36	36	36	37	37
112	35	35	36	37	38	38	38	38	37	36	35	34	34	33	34	34	35
113	33	33	34	35	36	36	36	35	34	33	32	32	31	31	31	32	33
114	30	31	32	32	33	33	33	33	32	31	30	30	29	29	29	30	30
115	28	29	30	30	31	31	31	30	30	29	28	28	27	27	27	28	28
116	26	27	27	28	29	29	29	28	28	27	26	26	25	26	26	26	26
117	25	25	26	26	27	27	27	26	26	25	24	24	24	24	24	24	25
118	23	24	24	25	25	25	25	25	24	23	23	22	22	22	23	23	23
119	22	22	23	23	23	23	23	23	23	22	21	21	21	21	21	21	22
120	20	21	21	22	22	22	22	21	21	21	20	20	20	20	20	20	20
121	19	20	20	20	20	20	20	20	20	19	19	18	19	19	19	19	19
122	18	18	19	19	19	19	19	18	18	18	18	17	18	18	18	18	18
123	17	17	18	18	18	18	18	17	17	17	17	16	17	17	17	17	17
124	16	17	17	17	17	17	17	16	16	16	16	16	16	16	16	16	16

125	16	16	16	16	16	16	16	15	15	15	15	15	15	15	15	16	16
126	15	15	15	15	15	15	15	15	14	14	14	14	15	15	15	15	15
127	14	15	15	15	14	14	14	14	14	14	13	13	14	14	14	14	14
128	14	14	14	14	13	14	13	13	13	13	13	13	14	14	14	14	14
129	13	13	13	13	13	13	13	13	13	12	13	12	13	13	13	13	13
130	13	13	13	13	12	12	12	12	12	12	12	12	13	13	13	13	13
131	13	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	13
132	12	12	12	12	11	11	11	11	11	11	11	11	12	12	12	12	12
133	12	12	12	12	11	11	11	11	11	11	11	11	12	12	12	12	12
134	11	12	12	11	11	11	11	11	11	11	11	11	11	11	11	12	11
135	11	11	11	11	11	11	10	10	10	10	11	10	11	11	11	11	11
136	11	11	11	11	10	10	10	10	10	10	10	10	11	11	11	11	11
137	11	11	11	11	10	10	10	10	10	10	10	10	11	11	11	11	11
138	11	10	10	10	10	10	10	10	10	10	10	10	10	10	10	11	11
139	10	10	10	10	10	10	9	9	9	9	9	10	10	10	10	10	10
140	10	10	10	10	9	9	9	9	9	9	9	9	10	10	10	10	10
141	10	10	10	10	9	9	9	9	9	9	9	9	10	9	10	10	10
142	10	9	9	9	9	9	9	9	9	9	9	9	9	9	9	10	10
143	9	9	9	9	9	9	8	8	9	9	8	9	9	9	9	9	9
144	9	9	9	9	8	8	8	8	8	8	8	8	9	9	9	9	9
145	9	9	9	9	8	8	8	8	8	8	8	8	9	8	8	9	9
146	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8
147	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8
148	8	8	8	8	8	7	7	7	7	7	7	7	8	8	8	8	8
149	8	8	8	8	7	7	7	7	7	7	7	7	7	8	8	8	8
150	7	8	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7
151	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7
152	7	7	7	7	6	6	6	6	6	6	6	6	7	7	7	7	7
153	7	7	7	7	6	6	6	6	6	6	6	6	6	6	6	7	7
154	6	6	6	6	6	6	6	6	6	6	6	5	6	6	6	6	6
155	6	6	6	6	6	5	5	5	6	5	5	5	6	6	6	6	6
156	6	6	6	6	5	5	5	5	5	5	5	5	6	5	6	6	6

157	6	6	6	6	5	5	5	5	5	5	5	4	5	5	5	5	6
158	5	5	5	5	5	5	5	5	4	4	4	4	5	5	5	5	5
159	5	5	5	5	4	4	4	4	4	4	4	4	5	5	5	5	5
160	5	5	5	5	4	4	4	4	4	4	4	4	5	4	4	5	5
161	4	4	4	4	4	4	4	4	4	4	4	3	4	4	4	4	4
162	4	4	4	4	4	4	3	3	3	3	3	3	4	4	4	4	4
163	4	4	4	4	3	3	3	3	3	3	3	3	4	4	4	4	4
164	4	4	4	4	3	3	3	3	3	3	3	3	3	3	3	4	4
165	3	3	3	3	3	3	3	3	3	3	2	2	3	3	3	3	3
166	3	3	3	3	3	3	2	3	2	2	2	2	3	3	3	3	3
167	3	3	3	3	3	3	2	2	2	2	2	2	3	3	3	3	3
168	3	3	3	3	3	2	2	2	2	2	2	2	3	3	3	3	3
169	3	3	3	3	3	2	2	2	2	2	2	2	3	3	3	3	3
170	3	3	3	3	2	2	2	2	2	2	2	2	3	2	2	3	3
171	3	3	2	3	2	2	2	2	2	2	2	2	2	2	2	2	3
172	2	2	3	2	2	2	2	2	2	2	2	2	2	2	2	2	2
173	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
174	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
175	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
176	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
177	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
178	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
179	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
180	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2

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 ******