



Report No.: GZE160698-A

NVLAP LAB CODE 201011-0

LM-79-08 Test Report

For

LIGHT EFFICIENT DESIGN

(Brand Name:N/A)

188 S. Northwest Highway Cary, IL60013

LED Lamp

Model name(s): LED-8087E30-A

Representative (Tested) Model: LED-8087E30-A (3000K)

Model Different: All construction and rating are the same, except CCT

Test & Report By:

Garman Mo

Engineer: Garman Mo

Date: Jul.12,2016

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>

1.1 Product Information:

Organization Name	LIGHT EFFICIENT DESIGN	
Brand Name	N/A	
Model Number	LED-8087E30-A	
SKU (if available)	N/A	
Type of Luminaire (for integral lamps, list base type and lamp type)	LED Lamp	
Rated Voltage / Frequency	120-277Vac, 50/60 Hz	
Nominal Power	30W	
Rated Initial Lamp Lumen	--	
Declared CCT	3000K	
LED Manufacturer	HongLi	
LED Model	SPMWH1228FD5WAV0S3	
Sample Number	GZE160698-A1(3000K)	
Luminaire Aperture (for downlights)	--	in.
Luminaire Length	--	mm
Luminaires Width	--	mm
Number of Units (modular products)	N/A	s

Photo



1.2 Test Specifications:

Date of Receipt	Jul.11,2016
Date of Test	Jul.12,2016
Test item	<ol style="list-style-type: none"> 1. Total Luminous Flux 2. Luminous Distribution Intensity 3. Luminous Efficacy 4. Correlated Color Temperature 5. Color Rendering Index 6. Chromaticity Coordinate 7. Electrical Parameters
Reference Standard	<ol style="list-style-type: none"> 1. IES LM-79-2008 Electrical and Photometric Measurements of Solid-State Lighting Products 2. ANSI C78.377-2008 Specifications for the Chromaticity of Solid State Lighting Products 3. CIE 13.3-1995 Method of Measuring and Specifying Colour Rendering Properties of Light Sources 4. CIE 15-2004 Technical Report Colorimetry 5. IESNA LM-16-93 Practical Guide to Colorimetry of Light Source 6. IESNA TM-16-05 Technical Memorandum on Light Emitting Diode (LED) Sources and Systems
Reference Work Instruction	QD25

1.3 Test Methods

<p>1) Photometric and Light Distribution Measurement – Goniophotometer Method:</p> <p>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 or rated Volts AC, 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.</p>
<p>2) Chromaticity Measurement – Sphere-Spectroradiometer Method:</p> <p>Chromaticity 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 or rated Volts AC, 60Hz. It was stabilized before measurement was made. Chromaticity coordinates, correlated color temperature and color rendering index were calculated from the spectral power distribution taken at 5 nm intervals over the range of 380 to 780 nm.</p>
<p>3) Electrical Measurements:</p> <p>Electrical parameters were measured using power meters incorporated in goniophotometer or sphere-spectroradiometer system. The ambient temperature surrounding the sample was maintained at $25^{\circ}\text{C} \pm 1^{\circ}\text{C}$. The sample was operated at 120 or rated Volts AC, 60Hz. It was stabilized before measurement was made. Voltage, frequency, current, power, power factor and total harmonic distortion were measured by and read from the power meter.</p>

2.1 Electrical, Photometric and Chromaticity Measurements <i>(Refer to Work Instruction QD25)</i>

Test date	2016-07-11	Test Ambient:	25.2 °C
Test Orientation	As intended	Stabilization Time (min)	90
Model Number	LED-8087E30-A(3000K)		

Electrical Measurement :

Sample No.	Voltage (Vac)	Frequency (Hz)	Current (A)	Power (W)	Power Factor	THD %
GZE160698-A1	120.0	60	0.2904	32.48	0.9322	12.95
	277.0	60	0.1245	31.97	0.9269	19.34
DLC Pass Criteria					>= 0.9(-3%)	<= 20(+5)

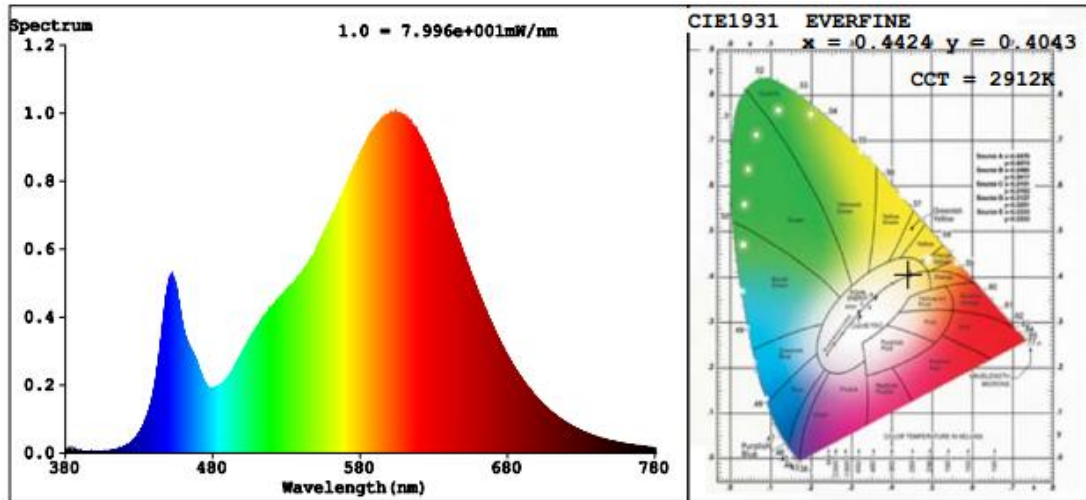
Chromaticity Measurement - Sphere-Spectroradiometer Method :

Parameter	Result	Special Color Rendering Indices			
Test Voltage (V)	120.0	R1	80	R9	4
Frequency (Hz)	60	R2	91	R10	79
CCT (K)	2912	R3	96	R11	76
Duv	-0.0006	R4	78	R12	70
Chromaticity (x, y)	x=0.4424 y=0.4043	R5	80	R13	82
Chromaticity (u', v')	u'=0.2540 v'=0.5223	R6	89	R14	98
Color Rendering Index (CRI)	81.4	R7	81	R15	72
R9	4	R8	57	--	--

Photometric Measurement – Goniophotometer Method :

Parameter	Result		DLC V4.0 Pass Criteria	
Test Voltage (V)	120.0	277.0	--	
Frequency (Hz)	60	60		
Total Luminous (lm)	3482.8	3477.3	--	
Luminous Efficacy (lm/W)	107.23	108.78	--	--
Beam Angle (°)	107.5	--	--	
Center Beam Candle Power (cd)	1344	--	--	

Spectral Power Distribution & Chromaticity Diagram

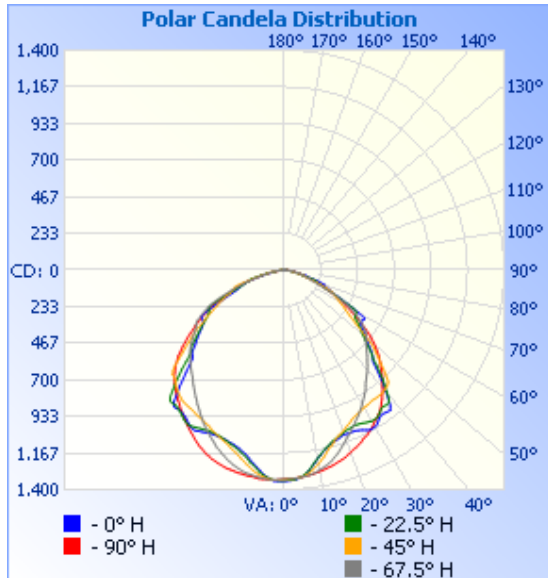


Zonal Lumen Tabulation

Zonal Lumen Summary		
Zone	Lumens	% Luminaire
0-30	984.1	28.3%
0-40	1,641.0	47.1%
0-60	2,882.7	82.8%
60-90	590.1	16.9%
70-100	202.3	5.8%
90-120	5.3	0.2%
0-90	3,472.8	99.7%
90-180	9.8	0.3%
0-180	3,482.6	100%

Lumens Per Zone					
Zone	Lumens	% Total	Zone	Lumens	% Total
0-10	124.6	3.6%	90-100	1.0	0%
10-20	341.2	9.8%	100-110	2.2	0.1%
20-30	518.3	14.9%	110-120	2.1	0.1%
30-40	656.9	18.9%	120-130	1.5	0%
40-50	675.0	19.4%	130-140	1.2	0%
50-60	566.8	16.3%	140-150	0.8	0%
60-70	388.8	11.2%	150-160	0.5	0%
70-80	166.3	4.8%	160-170	0.3	0%
80-90	35.0	1.0%	170-180	0.1	0%

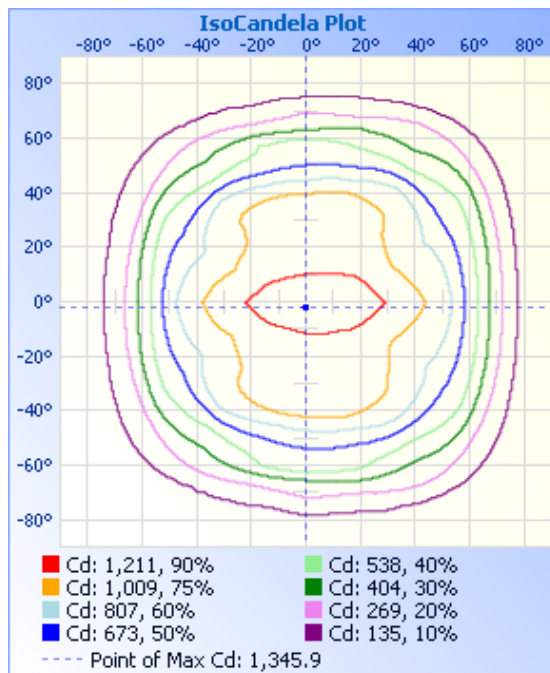
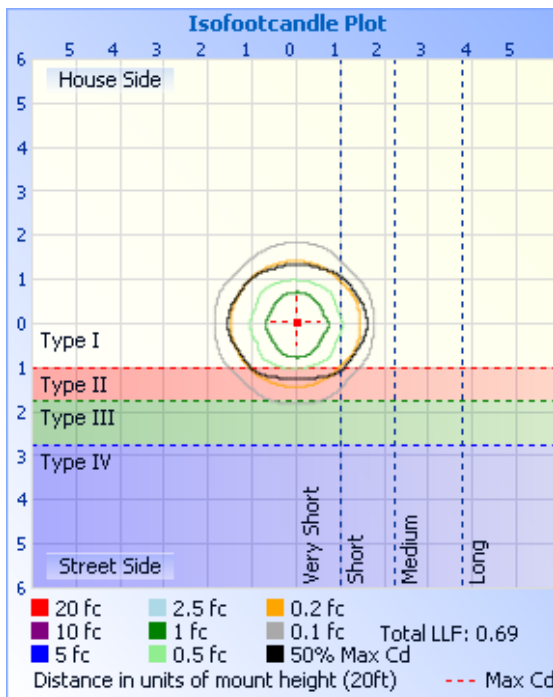
Photometric Data



Illuminance at a Distance

	Center Beam fc	Beam Width	
17.0ft	4.65 fc	43.6 ft	49.1 ft
34.0ft	1.16 fc	87.2 ft	98.1 ft
51.0ft	0.52 fc	130.7 ft	147.2 ft
68.0ft	0.29 fc	174.3 ft	196.3 ft
85.0ft	0.19 fc	217.9 ft	245.3 ft
102.0ft	0.13 fc	261.5 ft	294.4 ft

■ Vert. Spread: 104.1°
■ Horiz. Spread: 110.6°



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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	1344	1341	1335	1333	1333	1336	1338	1338	1344	1341	1335	1333	1333	1336	1338	1338	1344
1	1343	1338	1332	1331	1330	1333	1337	1336	1346	1342	1338	1333	1335	1338	1339	1337	1343
2	1340	1338	1330	1331	1328	1330	1334	1333	1346	1340	1340	1336	1337	1337	1339	1335	1340
3	1337	1335	1330	1328	1328	1330	1331	1327	1344	1340	1339	1336	1340	1336	1339	1335	1337
4	1331	1327	1327	1326	1325	1324	1326	1320	1335	1332	1337	1337	1339	1337	1337	1331	1331
5	1321	1318	1321	1322	1323	1321	1317	1307	1320	1324	1329	1337	1338	1337	1335	1324	1321
6	1309	1303	1314	1320	1319	1321	1309	1294	1307	1312	1324	1334	1338	1336	1330	1314	1309
7	1285	1286	1304	1315	1316	1312	1297	1274	1286	1298	1317	1331	1340	1334	1323	1299	1285
8	1266	1263	1286	1310	1312	1308	1283	1254	1268	1277	1304	1326	1334	1332	1312	1279	1266
9	1241	1239	1270	1304	1307	1302	1268	1238	1250	1259	1291	1322	1332	1329	1301	1261	1241
10	1219	1219	1254	1292	1303	1296	1249	1224	1233	1246	1275	1319	1331	1326	1285	1243	1219
11	1203	1200	1235	1285	1298	1286	1232	1205	1213	1226	1261	1314	1329	1322	1268	1224	1203
12	1185	1181	1217	1275	1293	1273	1219	1192	1199	1211	1244	1307	1326	1316	1254	1205	1185
13	1171	1167	1194	1264	1287	1264	1199	1178	1186	1198	1232	1298	1325	1310	1234	1190	1171
14	1157	1153	1173	1251	1282	1252	1185	1166	1175	1188	1216	1289	1321	1301	1221	1171	1157
15	1145	1142	1160	1234	1274	1238	1170	1156	1167	1176	1204	1280	1318	1294	1204	1160	1145
16	1140	1131	1142	1221	1268	1223	1152	1145	1159	1168	1191	1269	1316	1283	1191	1151	1140
17	1135	1123	1124	1203	1262	1206	1140	1139	1154	1161	1181	1258	1312	1274	1175	1140	1135
18	1127	1115	1111	1184	1255	1195	1129	1130	1150	1153	1169	1245	1305	1261	1163	1134	1127
19	1119	1110	1103	1169	1244	1176	1118	1123	1144	1148	1158	1233	1302	1249	1149	1126	1119
20	1115	1101	1092	1150	1235	1159	1105	1117	1142	1141	1152	1219	1295	1234	1140	1119	1115
21	1117	1096	1080	1133	1226	1145	1096	1114	1141	1136	1144	1209	1289	1218	1130	1112	1117
22	1118	1092	1069	1118	1218	1129	1088	1111	1140	1135	1137	1189	1281	1204	1119	1108	1118
23	1118	1089	1061	1099	1210	1118	1077	1108	1140	1131	1130	1174	1274	1185	1112	1106	1118
24	1120	1087	1049	1086	1202	1103	1068	1108	1141	1131	1122	1161	1263	1171	1102	1106	1120
25	1127	1088	1039	1068	1188	1088	1059	1110	1145	1131	1113	1146	1253	1153	1096	1106	1127
26	1134	1091	1034	1053	1179	1069	1052	1112	1151	1134	1102	1133	1242	1139	1086	1105	1134
27	1144	1095	1027	1040	1172	1048	1048	1116	1157	1139	1097	1114	1230	1122	1077	1109	1144
28	1154	1101	1022	1022	1159	1035	1041	1119	1162	1143	1091	1101	1219	1101	1072	1117	1154
29	1155	1106	1017	1007	1149	1020	1036	1124	1170	1149	1087	1081	1203	1085	1063	1121	1155

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30	1153	1112	1012	989	1135	1004	1031	1126	1169	1154	1082	1067	1193	1065	1058	1129	1153
31	1147	1112	1010	972	1120	993	1027	1124	1164	1159	1078	1049	1179	1050	1053	1134	1147
32	1130	1111	1009	957	1112	975	1023	1120	1153	1160	1073	1032	1168	1030	1047	1136	1130
33	1117	1102	1005	940	1099	961	1018	1109	1140	1155	1069	1019	1152	1014	1042	1133	1117
34	1112	1090	1002	923	1087	944	1014	1095	1128	1146	1066	999	1138	995	1039	1127	1112
35	1112	1078	1003	901	1070	926	1012	1087	1123	1135	1065	986	1125	976	1036	1119	1112
36	1116	1073	1003	882	1050	911	1012	1077	1115	1124	1062	969	1112	960	1031	1109	1116
37	1120	1078	1002	867	1033	890	1011	1068	1113	1116	1059	954	1102	943	1029	1099	1120
38	1098	1076	1002	851	1011	874	1009	1067	1118	1109	1056	939	1086	929	1028	1094	1098
39	1050	1059	1000	839	994	855	1003	1068	1120	1105	1048	926	1073	910	1025	1096	1050
40	1004	1015	995	821	972	837	994	1058	1094	1109	1040	908	1060	893	1022	1098	1004
41	965	973	989	806	949	824	985	1015	1040	1108	1031	894	1050	876	1016	1078	965
42	908	938	983	788	930	806	976	975	997	1089	1022	883	1032	865	1008	1034	908
43	863	891	970	772	912	792	966	928	943	1039	1010	869	1018	852	999	999	863
44	815	849	930	759	893	774	960	890	900	998	996	859	1006	837	990	955	815
45	798	800	893	742	868	760	940	842	852	950	984	844	988	827	981	916	798
46	780	776	852	729	851	743	904	796	815	906	978	835	974	815	976	862	780
47	755	744	820	713	828	729	856	771	797	857	975	819	953	804	957	810	755
48	727	710	782	700	807	713	819	756	793	812	955	807	937	792	928	784	727
49	701	684	754	686	780	696	775	730	771	786	921	797	916	780	888	757	701
50	684	662	712	676	758	684	735	701	742	775	875	783	891	764	857	728	684
51	661	636	657	669	730	668	705	683	724	754	834	768	869	751	821	698	661
52	643	619	616	660	700	658	667	659	704	720	801	751	839	732	788	674	643
53	622	597	573	647	673	645	625	640	684	701	763	736	813	713	762	647	622
54	607	581	544	625	638	639	584	617	663	675	732	716	781	696	727	622	607
55	596	560	511	607	608	625	555	600	642	652	702	701	756	678	686	604	596
56	589	544	489	584	573	604	523	579	629	632	673	685	724	666	634	581	589
57	590	537	466	567	544	574	500	564	616	609	628	670	693	653	600	563	590
58	596	532	449	540	509	553	475	549	608	590	596	665	668	645	563	542	596
59	597	533	428	516	483	529	453	539	607	570	571	655	638	624	530	532	597
60	549	533	411	483	453	502	436	536	609	558	539	637	614	603	505	524	549

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61	497	503	390	456	429	476	416	535	603	548	515	611	583	584	475	523	497
62	446	439	373	421	400	442	399	523	560	543	488	590	558	564	454	527	446
63	412	397	358	389	370	412	374	468	505	543	469	565	527	550	429	512	412
64	369	355	347	346	344	376	358	416	448	531	444	541	501	528	410	470	369
65	341	321	336	303	310	344	343	360	407	493	425	516	466	508	387	413	341
66	315	288	313	271	285	302	333	323	364	432	401	477	429	476	365	378	315
67	300	270	287	235	257	268	318	288	340	390	378	443	399	438	352	338	300
68	280	251	252	212	239	234	299	271	319	343	365	400	367	408	341	307	280
69	265	226	221	191	220	212	258	256	303	312	353	365	342	366	335	278	265
70	268	223	186	178	206	190	222	235	289	287	345	323	313	332	325	259	268
71	239	213	166	166	191	176	186	217	267	271	334	283	291	287	305	242	239
72	213	190	141	154	170	167	161	222	273	257	314	256	264	257	271	219	213
73	166	152	127	140	151	151	146	202	245	231	271	225	233	223	232	221	166
74	134	116	128	120	135	137	124	164	201	222	221	203	210	190	200	207	134
75	149	122	113	114	129	122	126	127	176	222	190	175	186	168	166	177	149
76	128	95	94	109	112	114	120	114	138	180	162	152	163	147	148	137	128
77	85	76	85	93	104	102	97	117	150	154	149	136	140	128	123	108	85
78	91	69	67	84	88	92	84	82	133	114	125	117	116	110	111	115	91
79	66	59	62	75	76	81	73	70	79	119	109	102	98	92	112	89	66
80	59	49	55	67	68	72	60	59	90	111	110	86	77	78	92	72	59
81	52	43	51	55	59	61	57	55	63	64	90	71	63	66	68	64	52
82	43	36	43	49	49	52	53	47	62	68	64	64	50	57	60	53	43
83	29	29	38	42	42	44	45	40	50	50	59	52	37	48	43	42	29
84	24	25	31	32	34	38	38	31	42	42	44	38	28	33	37	38	24
85	21	22	27	25	23	28	32	26	31	38	33	30	18	24	30	26	21
86	19	19	23	18	12	19	27	22	24	29	29	22	10	20	25	20	19
87	17	17	19	10	16	10	22	19	20	22	22	19	6	15	20	18	17
88	15	16	10	13	17	13	11	16	18	17	18	14	4	12	15	15	15
89	10	12	5	7	7	8	5	10	15	14	14	10	3	10	13	14	10
90	1	1	1	1	1	1	1	1	7	12	11	7	1	7	10	6	1
91	1	1	1	1	1	1	1	1	1	2	3	2	1	2	2	1	1

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92	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
93	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	0
94	0	1	0	1	1	1	1	1	1	1	1	1	1	1	1	0
95	0	0	1	1	1	1	1	0	1	1	1	1	1	1	1	0
96	0	0	0	1	1	1	1	0	1	1	1	1	1	1	1	0
97	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	0
98	0	0	1	1	1	1	1	0	1	1	1	1	1	1	1	0
99	0	0	1	1	1	1	1	1	1	1	1	1	1	1	1	0
100	0	0	1	2	1	2	1	0	1	1	1	1	1	1	1	0
101	0	0	1	2	11	3	1	0	1	1	1	1	1	1	1	0
102	0	0	1	4	17	5	1	0	1	1	1	1	1	1	1	0
103	0	0	1	5	17	6	1	1	1	1	1	1	1	1	1	0
104	0	0	1	6	16	7	1	0	1	1	1	1	1	1	1	0
105	0	0	1	7	15	8	1	0	1	1	1	1	1	1	1	0
106	0	0	1	7	14	8	1	0	1	1	1	1	1	1	1	0
107	0	0	1	8	13	9	1	0	1	1	1	1	1	1	1	0
108	0	0	1	8	13	9	1	0	1	1	1	1	1	1	1	0
109	0	0	1	8	12	9	1	0	1	1	1	1	1	1	1	0
110	0	0	1	8	12	9	1	0	1	0	1	1	1	1	1	0
111	0	1	1	8	11	8	1	0	1	1	1	1	1	1	1	0
112	0	0	1	8	10	8	1	1	1	1	1	1	1	1	1	0
113	0	0	2	8	10	8	2	1	1	1	1	1	1	1	1	0
114	0	1	2	7	9	8	2	0	1	1	1	1	1	1	1	0
115	0	1	2	7	9	8	2	0	1	1	1	1	1	1	0	0
116	1	1	2	7	9	7	2	1	1	1	1	1	1	1	1	1
117	1	1	2	7	8	7	2	1	1	1	1	1	1	1	1	1
118	0	1	2	6	8	7	2	1	1	1	1	1	1	1	1	0
119	0	1	2	6	7	6	2	1	1	1	1	1	1	1	1	0
120	0	1	2	6	7	6	2	1	1	1	1	1	1	1	1	0
121	0	1	2	6	6	6	2	1	1	1	1	1	1	1	1	0
122	1	1	2	5	6	5	2	1	1	1	1	1	1	1	1	1

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123	1	1	2	5	6	5	2	1	1	1	1	1	1	1	1	1
124	1	1	2	5	6	5	2	1	1	1	1	1	1	1	1	1
125	1	1	2	5	5	5	2	1	1	1	1	1	1	1	1	1
126	1	1	2	4	5	5	2	1	1	1	1	1	1	1	1	1
127	1	1	2	4	5	4	2	1	1	1	1	1	1	1	1	1
128	1	1	2	4	5	4	2	1	1	1	1	1	1	1	1	1
129	1	1	2	4	4	4	2	1	1	1	1	1	1	1	1	1
130	1	1	2	4	4	4	2	1	1	1	1	1	1	1	1	1
131	1	1	2	4	4	4	2	1	1	1	1	1	1	1	1	1
132	1	1	2	3	4	3	2	1	1	1	1	1	1	1	1	1
133	1	1	2	3	4	3	2	1	1	1	1	1	1	1	1	1
134	1	1	2	3	4	3	2	1	1	1	1	1	1	1	1	1
135	1	1	2	3	3	3	2	1	1	1	1	1	1	1	1	1
136	1	1	2	3	3	3	2	1	1	1	1	1	1	1	1	1
137	1	1	2	3	3	3	2	1	1	1	1	1	1	1	1	1
138	1	1	2	3	3	3	2	1	1	1	1	1	1	1	1	1
139	1	1	2	3	3	3	2	1	1	1	1	1	1	1	1	1
140	1	1	2	3	3	3	2	1	1	1	1	1	1	1	1	1
141	1	1	2	3	3	3	2	1	1	1	1	1	1	1	1	1
142	1	1	1	3	3	3	1	1	1	1	1	1	1	1	1	1
143	1	1	1	3	3	3	1	1	1	1	1	1	1	1	1	1
144	1	1	1	2	3	2	1	1	1	1	1	1	1	1	1	1
145	1	1	1	2	3	2	1	1	1	1	1	1	1	1	1	1
146	1	1	1	2	3	2	1	1	1	1	1	1	1	1	1	1
147	1	1	1	2	3	2	1	1	1	1	1	1	1	1	1	1
148	1	1	1	2	2	2	1	1	1	1	1	1	1	1	1	1
149	1	1	2	1	2	1	1	1	1	1	1	1	1	1	1	1
150	1	1	2	1	2	1	2	1	1	1	1	1	1	1	1	1
151	1	1	2	1	1	1	2	1	1	1	1	1	1	1	1	1
152	1	1	2	1	1	1	2	1	1	1	1	1	1	1	1	1
153	1	1	2	1	1	1	2	1	1	1	1	1	1	1	1	1

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154	1	1	2	1	1	1	2	1	1	1	1	1	1	1	1	1
155	1	1	2	1	1	1	2	1	1	1	1	1	1	1	1	1
156	1	1	1	2	1	2	1	1	1	1	1	1	1	1	1	1
157	1	1	1	2	1	2	1	1	1	1	1	1	1	1	1	1
158	1	1	1	2	1	2	1	1	1	1	1	1	1	1	1	1
159	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
160	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
161	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
162	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
163	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
164	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
165	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
166	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
167	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
168	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
169	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
170	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
171	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
172	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
173	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
174	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
175	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
176	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
177	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
178	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
179	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
180	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1

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3. Test Equipment

Equipment ID	Equipment Name	Last Calibration Date	Next Calibration Date
ST-R-336	2 meter Integrating Sphere	2016-07-01	2017-06-30
ST-R-331	Spectral analysis system HAAS-2000	2016-07-01	2017-06-30
D204	Standard Lamp	2016-07-01	2017-06-30
PF2010	Power Meter for Integrating Sphere	2016-07-01	2017-06-30
EE-09	Goniophotometer system	2016-07-01	2017-06-30
D908S	Standard Lamp	2016-07-01	2017-06-30
PF210	Power Meter for Goniophotometer	2016-07-01	2017-06-30
ST-R-181A	Temperature Tester	2016-07-01	2017-06-30
Uncertainty: Photometric Measurement (Sphere):1.74% Chromaticity Measurement(Sphere):14.3K Photometric Measurement(Goniophotometer):1.62%			

******* END OF REPORT *******

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