



Report No.: GZE160347-M

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-8087E40-A  
LED-8087M40-A

Remark : The suffix of the model name“E” stand for E26;  
“M” stand for E39.

Representative (Tested) Model: LED-8087E40-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-M
Laboratory Contact Name	Tommy Liang

**Product Information:**

Organization Name	LIGHT EFFICIENT DESIGN		
Brand Name	N/A		
Model Number	LED-8087E40-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	--	32.85	W
Input Current	--	0.2980	A
Input Voltage (ac)	--	120.0	V
Power Factor	--	0.9187	
Off-State Power	--	0	W

**Photometric Characteristics**

Total Initial Lumen Output	--	4171.8	lm
Initial Lumen Efficacy	--	127.00	lm/w
Correlated color temperature / CCT	4041	--	K
Color rendering index / CRI	83.5	--	
R9 Value	11	--	
Duv	0.0005	--	
<b>Luminous Intensity Distribution</b>			
Center beam candlepower (if applicable)		1534	cd
Beam angle (if applicable)		109.7	°
Zonal lumens in the 0°-60° zone		81.2	%
Zonal lumens in the 60°-90° zone	-----	18.2	%
Zonal lumens in the 90°-120° zone		0.5	%
Zonal lumens in the 120°-180° zone		0.1	%

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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  $1^{\circ}$  vertical intervals and  $22.5^{\circ}$  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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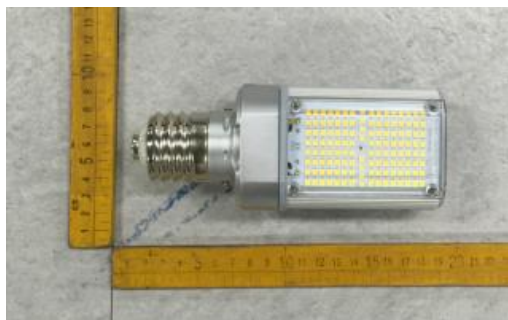
**1. Product Information:**

Brand Name	N/A
Model Number	LED-8087E40-A, LED-8087M40-A
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-M1(4000K)

**Photo**



LED-8087E40-A



LED-8087M40-A

<b>2.1 Electrical, Photometric and Chromaticity Measurements</b> (Refer to Work Instruction QD25)	<b>IES LM-79 2008</b>
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<b>Test date</b>	2016-04-24	<b>Test Ambient:</b>	25.2 °C
<b>Test Orientation</b>	As intended	<b>Stabilization Time (min)</b>	90
<b>Model Number</b>	LED-8087E40-A		

**Electrical Measurement:**

Sample No.	Voltage (Vac)	Frequency (Hz)	Current (A)	Power (W)	Power Factor	THD %
GZE160347	120.0	60	0.2980	32.85	0.9187	11.65
-M1	277.0	60	0.1270	32.12	0.9133	18.01

**Sphere-Spectroradiometer Method:**

Parameter	Result
Test Voltage (V)	120.0
Frequency (Hz)	60
Color Rendering Index (CRI)	83.5
R9	11
CCT (K)	4041
Chromaticity (x, y)	x=0.3789 y=0.3769
Chromaticity (u', v')	u'=0.2241 v'=0.5014
Duv	0.0005

Special Color Rendering Indices			
R1	82	R9	11
R2	90	R10	76
R3	95	R11	82
R4	82	R12	62
R5	82	R13	84
R6	86	R14	98
R7	86	R15	76
R8	65	--	--

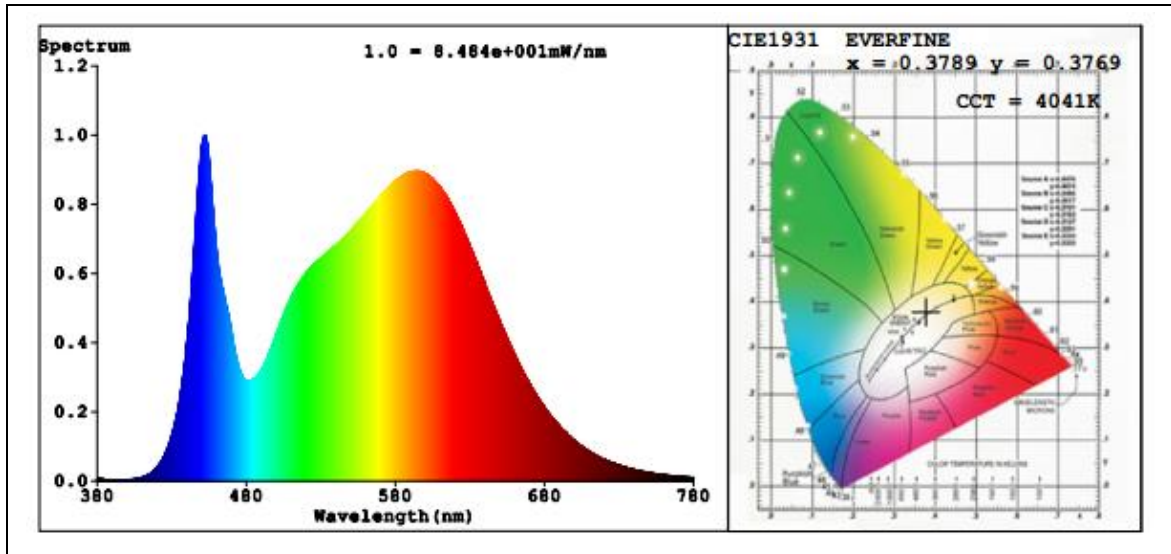
**Goniophotometer Method :**

Parameter	Result
Test Voltage (V)	120.0
Frequency (Hz)	60
Total Luminous (lm)	4171.8
Luminous Efficacy (lm/W)	127.00
Beam Angle°	109.7
Center Beam Candle Power (cd)	1534

**Goniophotometer Methodn :**

Parameter	Result
Test Voltage (V)	277.0
Frequency (Hz)	60
Total Luminous (lm)	4179.5
Luminous Efficacy (lm/W)	130.12

**Spectral Power Distribution & Chromaticity Diagram**



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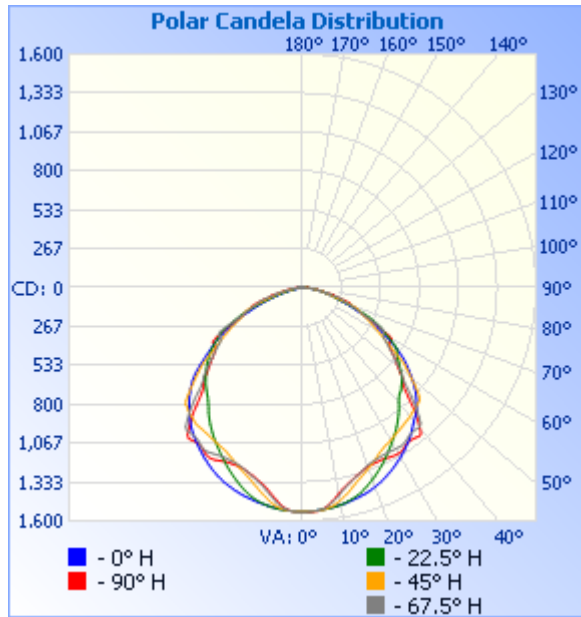
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**Zonal Lumen Tabulation**

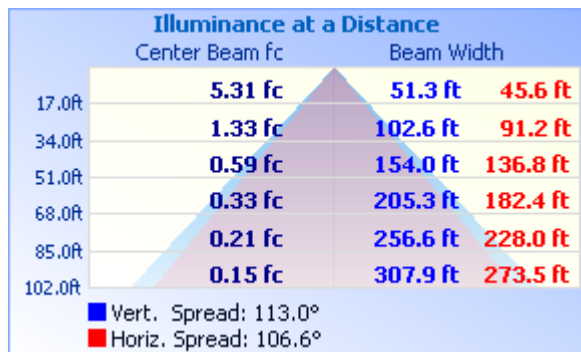
Zonal Lumen Summary		
Zone	Lumens	% Luminaire
0-30	1,138.5	27.3%
0-40	1,899.7	45.5%
0-60	3,386.6	81.2%
60-90	759.6	18.2%
70-100	279.8	6.7%
90-120	21.2	0.5%
0-90	4,146.3	99.4%
90-180	25.1	0.6%
0-180	4,171.4	100%

Lumens Per Zone					
Zone	Lumens	% Total	Zone	Lumens	% Total
0-10	143.7	3.4%	90-100	4.9	0.1%
10-20	395.4	9.5%	100-110	12.1	0.3%
20-30	599.4	14.4%	110-120	4.1	0.1%
30-40	761.2	18.2%	120-130	1.2	0%
40-50	800.1	19.2%	130-140	0.8	0%
50-60	686.9	16.5%	140-150	0.7	0%
60-70	484.7	11.6%	150-160	0.6	0%
70-80	219.1	5.3%	160-170	0.4	0%
80-90	55.8	1.3%	170-180	0.2	0%

### Photometric Data



### Illuminance Plots



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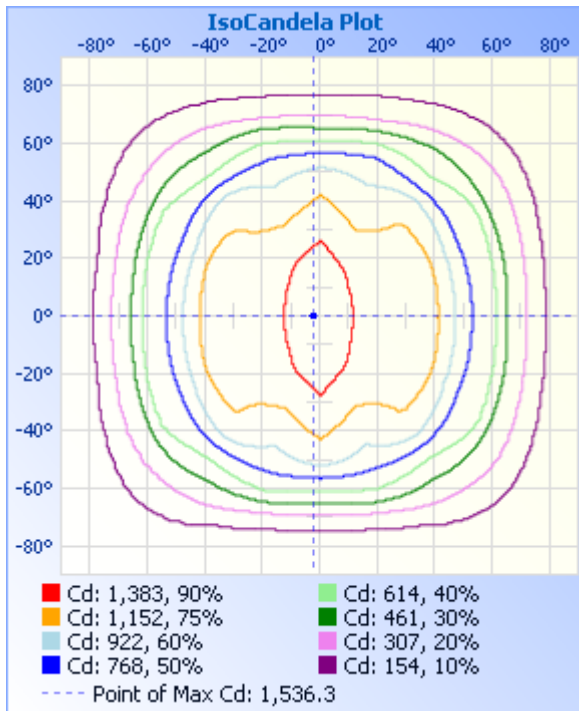
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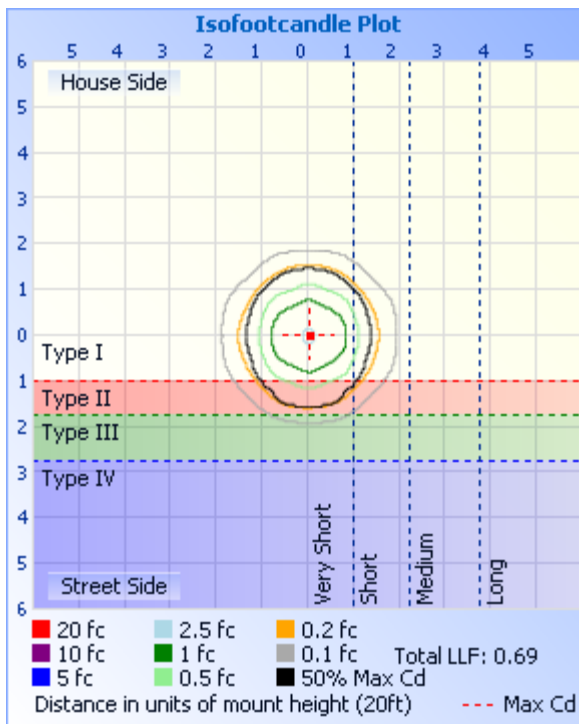
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### ISOCANDELA DIAGRAM



### 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	1534	1534	1534	1534	1534	1534	1534	1534	1534	1534	1534	1534	1534	1534	1534	1534	1534
1	1533	1533	1534	1536	1535	1535	1535	1536	1534	1533	1535	1535	1534	1534	1534	1534	1533
2	1534	1533	1534	1534	1536	1535	1534	1535	1534	1534	1534	1535	1534	1534	1534	1535	1534
3	1532	1531	1534	1534	1536	1536	1535	1534	1533	1532	1533	1533	1532	1531	1532	1533	1532
4	1530	1530	1533	1532	1535	1534	1534	1534	1531	1531	1531	1527	1523	1526	1528	1531	1530
5	1529	1528	1531	1526	1526	1528	1532	1533	1527	1529	1526	1516	1510	1515	1524	1530	1529
6	1525	1526	1526	1517	1514	1518	1527	1531	1525	1527	1518	1501	1491	1500	1516	1525	1525
7	1523	1524	1518	1502	1496	1504	1520	1529	1521	1523	1507	1481	1467	1479	1503	1522	1523
8	1519	1520	1510	1482	1476	1483	1509	1525	1518	1520	1495	1459	1445	1457	1489	1518	1519
9	1515	1516	1497	1463	1456	1465	1496	1521	1515	1514	1477	1436	1422	1435	1470	1511	1515
10	1511	1511	1481	1444	1432	1444	1479	1517	1511	1508	1458	1415	1401	1414	1451	1505	1511
11	1508	1506	1465	1420	1412	1421	1462	1511	1505	1501	1440	1394	1383	1394	1433	1496	1508
12	1502	1498	1448	1402	1396	1403	1445	1504	1502	1492	1421	1377	1368	1378	1414	1486	1502
13	1498	1490	1431	1386	1380	1386	1427	1494	1497	1482	1403	1362	1355	1364	1395	1475	1498
14	1492	1481	1411	1372	1367	1372	1405	1484	1491	1471	1385	1349	1343	1352	1376	1462	1492
15	1487	1470	1392	1358	1354	1359	1388	1473	1486	1458	1367	1337	1332	1338	1360	1447	1487
16	1481	1459	1376	1344	1341	1345	1372	1461	1481	1444	1352	1324	1323	1326	1345	1432	1481
17	1476	1444	1361	1333	1332	1333	1357	1444	1474	1429	1339	1314	1316	1317	1332	1415	1476
18	1469	1430	1347	1321	1321	1321	1343	1429	1468	1413	1325	1307	1305	1310	1319	1399	1469
19	1461	1415	1333	1310	1311	1310	1329	1415	1461	1396	1313	1297	1303	1300	1306	1382	1461
20	1452	1399	1318	1297	1307	1299	1313	1397	1453	1380	1299	1290	1301	1294	1292	1364	1452
21	1444	1384	1303	1291	1303	1293	1299	1381	1446	1362	1285	1287	1301	1292	1280	1348	1444
22	1435	1366	1290	1286	1301	1288	1286	1364	1437	1346	1272	1284	1301	1291	1269	1330	1435
23	1425	1350	1276	1282	1299	1285	1272	1345	1428	1328	1262	1283	1301	1289	1258	1312	1425
24	1414	1333	1262	1278	1299	1282	1259	1327	1419	1309	1250	1281	1305	1287	1246	1297	1414
25	1403	1316	1248	1274	1299	1280	1245	1308	1407	1293	1240	1281	1311	1289	1239	1279	1403
26	1391	1298	1238	1274	1302	1278	1236	1289	1397	1273	1233	1283	1317	1290	1233	1262	1391
27	1380	1278	1229	1272	1306	1278	1229	1272	1385	1256	1227	1286	1325	1296	1227	1247	1380
28	1367	1259	1221	1273	1309	1280	1222	1255	1372	1239	1223	1291	1329	1300	1221	1231	1367

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29	1354	1243	1215	1274	1313	1283	1217	1237	1360	1221	1217	1296	1329	1305	1216	1214	1354
30	1343	1225	1207	1276	1313	1287	1211	1222	1348	1204	1211	1300	1323	1307	1210	1198	1343
31	1328	1207	1200	1277	1311	1288	1205	1203	1333	1187	1206	1300	1311	1306	1205	1179	1328
32	1316	1189	1193	1278	1304	1290	1200	1186	1320	1169	1201	1297	1296	1300	1201	1161	1316
33	1301	1171	1185	1274	1293	1286	1193	1166	1306	1150	1197	1287	1289	1287	1198	1144	1301
34	1286	1152	1181	1267	1283	1279	1189	1147	1292	1131	1195	1273	1287	1275	1196	1125	1286
35	1272	1132	1174	1256	1283	1269	1185	1127	1279	1112	1191	1265	1287	1268	1193	1106	1272
36	1256	1113	1168	1249	1283	1265	1181	1108	1264	1093	1190	1259	1292	1262	1192	1084	1256
37	1239	1092	1164	1246	1287	1264	1177	1086	1249	1071	1188	1257	1297	1262	1191	1063	1239
38	1223	1071	1159	1243	1295	1263	1174	1064	1234	1048	1185	1259	1282	1265	1186	1045	1223
39	1204	1049	1154	1245	1288	1268	1171	1043	1217	1028	1179	1261	1240	1263	1177	1030	1204
40	1188	1026	1149	1247	1251	1270	1165	1024	1198	1008	1171	1247	1196	1235	1172	1019	1188
41	1174	1006	1140	1233	1204	1252	1161	1007	1180	991	1166	1207	1149	1192	1166	1007	1174
42	1164	990	1135	1192	1156	1208	1158	992	1160	979	1161	1164	1090	1151	1155	996	1164
43	1146	981	1133	1150	1098	1164	1152	979	1139	966	1149	1118	1037	1103	1146	990	1146
44	1125	971	1125	1105	1044	1116	1148	966	1120	953	1139	1068	992	1049	1141	981	1125
45	1107	956	1120	1053	995	1062	1147	950	1099	939	1134	1014	959	998	1117	965	1107
46	1084	944	1114	1003	957	1011	1136	934	1078	923	1111	965	948	954	1080	954	1084
47	1060	930	1092	954	946	963	1101	917	1055	908	1071	932	925	931	1043	940	1060
48	1036	913	1058	924	924	934	1058	902	1033	893	1032	916	887	911	1009	923	1036
49	1009	896	1020	904	884	921	1016	885	1010	878	991	884	860	872	972	906	1009
50	982	877	978	868	859	885	973	869	984	861	956	848	834	841	936	888	982
51	954	857	944	837	831	848	938	852	952	845	920	818	812	811	904	872	954
52	926	838	906	807	811	819	900	836	917	828	887	790	786	787	866	859	926
53	899	819	874	780	784	791	870	819	879	809	848	765	763	761	815	850	899
54	872	803	829	753	759	766	824	802	840	790	793	739	741	738	772	842	872
55	842	790	775	728	736	739	772	785	804	771	750	715	732	715	735	828	842
56	807	780	734	704	719	715	732	770	768	752	712	691	726	692	699	809	807
57	770	769	695	682	710	692	696	747	737	730	676	671	724	681	665	784	770
58	730	744	658	660	707	670	660	720	706	704	642	663	725	673	634	757	730
59	689	712	624	646	704	659	627	693	671	680	609	658	718	669	608	730	689
60	649	679	594	639	702	653	598	671	632	658	581	658	683	668	584	697	649

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61	614	650	568	632	682	650	571	652	589	637	553	658	624	658	560	658	614
62	582	626	545	626	627	646	541	623	550	606	523	640	574	618	538	618	582
63	552	599	523	609	574	629	511	579	514	568	494	585	533	561	516	581	552
64	520	571	498	560	532	580	482	536	482	530	467	529	491	513	498	547	520
65	485	539	470	508	490	528	456	495	447	496	449	485	462	472	484	512	485
66	446	503	446	466	453	484	439	458	405	461	438	444	438	436	469	473	446
67	405	461	430	428	429	444	430	418	365	421	427	411	417	409	449	426	405
68	373	412	414	394	408	408	417	370	333	375	412	387	396	388	418	378	373
69	347	366	398	372	386	384	397	328	303	332	382	368	377	369	380	337	347
70	317	331	373	352	353	364	365	294	269	296	342	345	368	345	343	308	317
71	281	298	335	322	344	333	322	259	238	259	304	320	340	330	307	281	281
72	259	262	293	294	340	302	283	224	211	225	267	312	306	313	272	249	259
73	253	233	253	297	304	305	246	198	181	199	235	287	276	280	245	228	253
74	226	224	228	277	269	288	218	172	158	172	212	256	232	251	221	222	226
75	198	205	203	242	219	254	196	149	131	150	186	218	228	209	198	199	198
76	177	178	172	192	210	201	163	130	109	128	162	182	219	199	188	179	177
77	158	163	173	179	221	177	156	112	86	110	159	189	166	182	177	156	158
78	148	145	170	181	157	191	153	95	71	93	143	154	165	141	150	149	148
79	124	138	138	132	146	140	127	84	54	80	116	128	140	140	133	137	124
80	115	122	120	127	138	123	98	73	41	69	99	124	132	114	112	117	115
81	93	111	108	107	118	115	96	59	29	56	86	106	109	104	102	104	93
82	80	93	93	102	106	103	71	46	18	43	70	90	102	94	90	95	80
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85	52	58	67	60	59	60	49	22	3	21	44	50	50	49	58	56	52
86	44	48	52	45	45	45	38	18	1	17	34	37	36	36	45	47	44
87	34	37	40	33	32	33	28	13	0	12	24	26	26	27	35	34	34
88	24	28	31	25	24	24	19	9	0	9	17	20	20	21	27	25	24
89	18	21	24	21	19	19	15	7	0	7	13	16	15	17	21	20	18
90	15	17	19	16	14	14	11	4	0	5	10	12	10	13	17	17	15
91	14	14	17	12	9	9	8	0	0	0	7	7	8	11	16	12	14
92	0	0	13	11	7	7	1	0	0	0	0	5	6	9	6	0	0

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93	0	0	0	5	4	1	0	0	0	0	0	0	0	0	0	0	0
94	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0
95	4	10	0	0	0	0	0	1	0	0	0	0	0	0	13	4	
96	18	15	0	0	0	0	0	0	0	0	0	0	0	0	15	18	
97	21	16	1	0	0	0	0	0	0	0	0	0	0	8	17	21	
98	21	17	15	0	0	0	0	0	0	0	0	0	0	16	18	21	
99	21	16	14	0	0	3	0	0	0	0	14	0	0	13	18	21	
100	20	17	12	0	4	24	0	0	0	0	26	30	0	11	17	20	
101	21	17	11	0	29	25	0	0	0	0	31	37	0	10	18	21	
102	21	17	10	0	29	26	0	0	0	0	29	41	1	9	18	21	
103	20	18	9	1	32	26	1	0	0	0	1	30	36	4	6	17	20
104	21	16	6	3	32	29	2	0	0	0	1	29	39	8	3	16	21
105	19	16	2	5	37	26	6	0	0	0	5	26	35	10	0	17	19
106	19	17	0	9	30	23	9	0	0	0	7	23	33	10	0	15	19
107	18	14	0	9	27	22	9	0	0	0	7	19	27	11	0	11	18
108	15	9	0	10	25	19	9	0	0	0	8	20	23	13	0	8	15
109	10	6	0	12	22	20	9	0	0	0	7	19	24	13	0	3	10
110	7	1	0	11	22	19	8	0	0	0	6	16	23	12	0	0	7
111	2	0	0	10	21	15	6	0	0	0	5	14	20	11	0	0	2
112	0	0	0	10	17	13	5	0	0	0	4	13	17	10	0	0	0
113	0	0	0	9	15	13	4	0	0	0	4	12	15	9	0	0	0
114	0	0	0	8	14	11	4	0	0	0	3	10	13	8	0	0	0
115	0	0	0	7	12	8	3	0	0	0	2	8	12	7	1	0	0
116	0	0	1	6	9	7	2	0	0	0	2	7	10	6	1	0	0
117	0	0	1	5	8	6	2	0	0	0	2	6	9	5	1	0	0
118	0	0	1	5	7	6	1	0	0	0	1	5	8	5	1	0	0
119	0	0	1	5	6	5	1	0	0	0	1	5	7	4	1	0	0
120	0	0	1	4	6	4	1	0	0	0	1	4	6	4	1	0	0
121	0	0	1	3	5	3	1	0	0	0	1	3	5	3	1	0	0
122	0	0	1	3	4	3	0	0	0	0	1	3	4	3	1	0	0
123	0	1	1	3	3	2	0	1	1	1	1	2	4	3	1	0	0
124	1	0	1	2	3	2	0	0	1	1	1	2	4	2	1	0	1

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125	1	1	1	2	2	1	0	0	1	1	1	2	3	2	1	0	1
126	1	1	1	2	2	1	0	1	1	1	1	1	3	2	1	0	1
127	1	1	1	2	2	1	0	1	1	1	1	1	3	2	1	1	1
128	1	1	1	2	1	1	1	1	1	1	1	1	2	2	1	1	1
129	1	1	1	1	1	1	1	1	1	1	1	1	2	2	1	1	1
130	1	1	1	1	1	1	1	1	1	1	1	1	2	1	1	1	1
131	1	1	1	1	1	1	1	1	1	1	1	1	2	1	1	1	1
132	1	1	1	1	1	1	1	1	1	1	1	1	2	1	1	1	1
133	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
134	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
135	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
136	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
137	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
138	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
139	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
140	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
141	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
142	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
143	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
144	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
145	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
146	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
147	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
148	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
149	2	1	1	1	1	1	1	1	1	1	2	1	1	1	1	1	2
150	2	1	1	1	1	1	1	1	1	1	2	1	1	1	1	1	2
151	2	1	1	1	1	1	1	1	1	1	2	1	1	1	1	1	2
152	2	1	1	1	1	1	1	1	1	1	2	1	1	1	1	1	2
153	2	2	1	1	1	1	1	1	1	1	2	1	1	1	1	1	2
154	2	2	1	1	1	1	1	1	1	1	3	1	1	1	1	1	2
155	2	2	1	1	1	1	1	1	1	1	3	1	1	1	1	1	2
156	2	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2

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157	2	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2
158	2	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2
159	2	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2
160	2	2	1	1	1	1	1	2	1	1	1	1	1	1	1	1	2
161	2	2	1	1	1	1	1	2	1	1	1	1	1	1	2	1	2
162	2	2	2	1	1	1	1	2	1	2	1	2	1	1	1	1	2
163	2	2	1	1	1	1	1	2	1	2	2	2	1	1	1	1	2
164	2	2	1	1	1	1	1	2	1	2	1	2	1	1	1	1	2
165	2	2	1	1	2	1	1	2	1	2	1	2	1	1	1	1	2
166	2	2	1	1	2	1	1	2	1	2	1	2	1	1	1	1	2
167	2	2	1	1	2	2	1	2	2	2	2	2	1	1	1	1	2
168	2	2	2	1	2	2	2	2	2	2	2	2	1	1	2	1	2
169	2	2	2	1	2	2	2	2	2	2	2	2	1	1	2	2	2
170	2	2	2	1	2	2	2	2	2	2	2	2	1	1	2	2	2
171	2	2	2	1	2	2	2	2	2	2	2	2	1	1	2	2	2
172	2	2	2	1	2	2	2	2	2	2	2	2	1	1	2	2	2
173	2	2	2	1	2	2	2	2	2	2	2	2	1	1	2	2	2
174	2	2	2	1	2	2	2	2	2	2	2	2	1	1	2	2	2
175	2	2	2	1	2	2	2	2	2	2	2	2	1	1	2	2	2
176	2	2	2	2	2	2	2	2	2	2	2	2	1	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 \*\*\*\*\***