



Report No.: BLC2009007E-G

## LM-79-08 Test Report

For

# LEDVANCE LLC

(Brand Name: SYLVANIA)

200 Ballardvale St. Wilmington, MA 01887 USA

## LED Corn Lamp

Model name(s): LED80HIDRSC2MOG

Representative (Tested) Model:

LED80HIDRSC2MOG(3000K)

LED80HIDRSC2MOG(4000K)

LED80HIDRSC2MOG(5000K)

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

Test & Report By:

*Grace Li*

Engineer: Grace Li

Date: 2020-09-11

Review By:


*Jason Luo*

Manager: Jason Luo



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### 1.1 Product Information:

Organization Name	LEDVANCE LLC		
Brand Name	SYLVANIA		
Model Number	LED80HIDRSC2MOG		
SKU (if available)	N/A		
Type of Product (for integral lamps, list base type and lamp type)	LED Corn Lamp		
Rated Voltage / Frequency	100-277Vac, 50/60 Hz		
Nominal Power	80W		
Rated Initial Lamp Lumen	--		
Declared CCT	3000K, 4000K, 5000K		
LED Manufacturer	Lumileds		
LED Model	L128-XX80RA35000H1		
Sample Number	BLC2009007E-G1(3000K), G2(4000K), G3(5000K)		
Luminaire Aperture (for downlights)	--	in. mm mm s	
Luminaire Length	--		
Luminaires Width	--		
Number of Units (modular products)	N/A		
Photo			
			



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## 1.2 Test Specifications:

Date of Receipt	2020-09-07
Date of Test	2020-09-11
Test item	<ol style="list-style-type: none"><li>1. Total Luminous Flux</li><li>2. Luminous Distribution Intensity</li><li>3. Luminous Efficacy</li><li>4. Correlated Color Temperature</li><li>5. Color Rendering Index</li><li>6. Chromaticity Coordinate</li><li>7. Electrical Parameters</li></ol>
Reference Standard	<ol style="list-style-type: none"><li>1. IES LM-79-2008 Electrical and Photometric Measurements of Solid-State Lighting Products</li><li>2. ANSI C78.377-2008 Specifications for the Chromaticity of Solid State Lighting Products</li><li>3. CIE 13.3-1995 Method of Measuring and Specifying Colour Rendering Properties of Light Sources</li><li>4. CIE 15-2004 Technical Report Colorimetry</li><li>5. IESNA LM-16-93 Practical Guide to Colorimetry of Light Source</li><li>6. IESNA TM-16-05 Technical Memorandum on Light Emitting Diode (LED) Sources and Systems</li></ol>
Reference Work Instruction	BL-QP-033

## 1.3 Test Methods

### 1) Photometric and Light Distribution Measurement – Goniophotometer 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 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  $1^{\circ}$  vertical intervals and  $22.5^{\circ}$  horizontal intervals.

### 2) Chromaticity Measurement – Sphere-Spectroradiometer Method:

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.

### 3) Electrical Measurements:

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.



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**2.1 Electrical, Photometric and Chromaticity Measurements***(Refer to Work Instruction BL-QP-033)*

<b>Test date</b>	2020-09-11	<b>Test Ambient:</b>	25.2 ° C
<b>Test Orientation</b>	As intended	<b>Stabilization Time (min)</b>	90
<b>Model Number</b>	LED80HIDRSC2MOG(3000K)		

**Electrical Measurement:**

Sample No.	Voltage (Vac)	Frequency (Hz)	Current (A)	Power (W)	Power Factor	THD %
BLC200900	120.1	60	0.666	79.32	0.992	7.83
7E-G1	277.1	60	0.331	82.98	0.904	15.27
<b>DLC Pass Criteria</b>					$\geq 0.9(-3\%)$	$\leq 20(+5)$

**Chromaticity Measurement - Sphere-Spectroradiometer Method:**

Parameter	Result	Special Color Rendering Indices			
Test Voltage (V)	120.0	R1	80	R9	1
Frequency (Hz)	60	R2	92	R10	82
CCT (K)	2914	R3	94	R11	79
Duv	-0.0013	R4	79	R12	73
Chromaticity (x, y)	x=0.4411 y=0.4021	R5	81	R13	83
Chromaticity (u', v')	u(u')=0.2541 v'=0.5213	R6	91	R14	97
Color Rendering Index (CRI)	81	R7	79	R15	72
R9	1	R8	54	--	--
Rf	84				
Rg	95				
Rcs,h1(%)	-12				

**Photometric Measurement – Goniophotometer Method:**

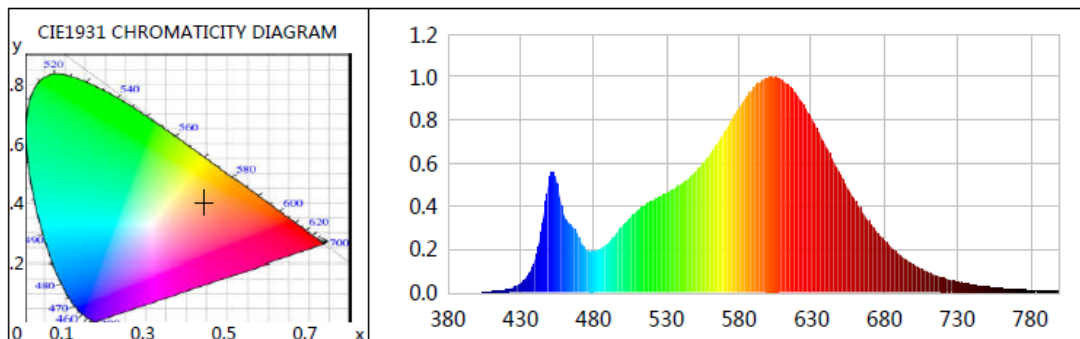
Parameter	Result	
Test Voltage (V)	120.0	277.0
Frequency (Hz)	60	60
Total Luminous (lm)	11384.2	11918.8
Luminous Efficacy (lm/W)	143.52	143.63
Most worst Luminous/Highest	137.19	
Beam Angle (°)	--	--
Center Beam Candle Power (cd)	162	--



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## Spectral Power Distribution & Chromaticity Diagram



WL(nm)	PL	PE(mW/nm)	WL(nm)	PL	PE(mW/nm)	WL(nm)	PL	PE(mW/nm)
380	0.0004	0.1078	525	0.4429	107.3568	670	0.3204	77.6508
385	0.0004	0.1009	530	0.4593	111.3184	675	0.2773	67.2247
390	0.0006	0.1524	535	0.4775	115.7383	680	0.2398	58.1304
395	0.0003	0.0716	540	0.5014	121.5384	685	0.2055	49.8158
400	0.0007	0.1815	545	0.5256	127.4044	690	0.1761	42.6733
405	0.0014	0.3390	550	0.5576	135.1566	695	0.1509	36.5638
410	0.0021	0.5189	555	0.5949	144.2002	700	0.1286	31.1678
415	0.0054	1.3085	560	0.6406	155.2775	705	0.1101	26.6974
420	0.0112	2.7085	565	0.6907	167.4229	710	0.0934	22.6401
425	0.0222	5.3712	570	0.7444	180.4356	715	0.0789	19.1140
430	0.0426	10.3220	575	0.8024	194.4921	720	0.0674	16.3264
435	0.0799	19.3559	580	0.8572	207.7664	725	0.0572	13.8662
440	0.1538	37.2873	585	0.9044	219.2073	730	0.0480	11.6385
445	0.3217	77.9848	590	0.9493	230.0932	735	0.0410	9.9261
450	0.5384	130.4945	595	0.9794	237.3934	740	0.0353	8.5470
455	0.5033	121.9806	600	0.9976	241.8066	745	0.0302	7.3289
460	0.3546	85.9547	605	0.9978	241.8496	750	0.0265	6.4189
465	0.3098	75.0857	610	0.9857	238.9141	755	0.0216	5.2430
470	0.2532	61.3704	615	0.9572	232.0093	760	0.0186	4.5142
475	0.1964	47.6136	620	0.9164	222.1327	765	0.0155	3.7678
480	0.1881	45.5972	625	0.8633	209.2619	770	0.0136	3.2860
485	0.2034	49.2923	630	0.8053	195.1949	775	0.0104	2.5113
490	0.2262	54.8217	635	0.7422	179.9015	780	0.0093	2.2583
495	0.2647	64.1660	640	0.6759	163.8243	785	0.0068	1.6405
500	0.3076	74.5527	645	0.6078	147.3146	790	0.0068	1.6600
505	0.3449	83.6010	650	0.5433	131.6943	795	0.0055	1.3442
510	0.3781	91.6508	655	0.4805	116.4695	800	0.0041	0.9949
515	0.4036	97.8147	660	0.4229	102.4996			
520	0.4238	102.7220	665	0.3695	89.5565			



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## TM30

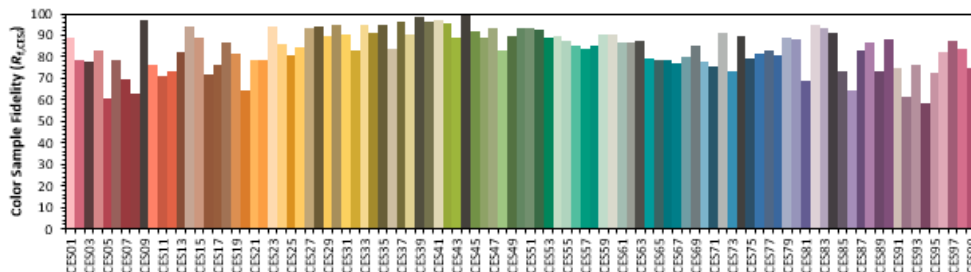
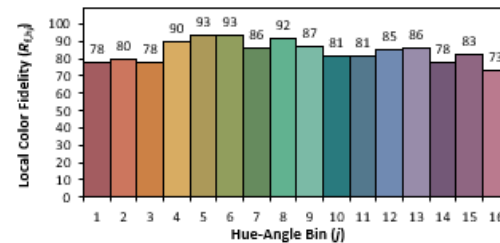
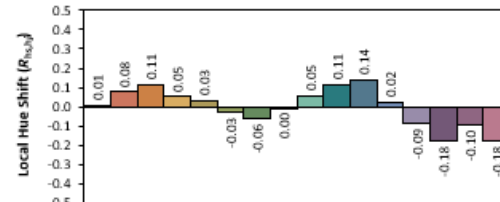
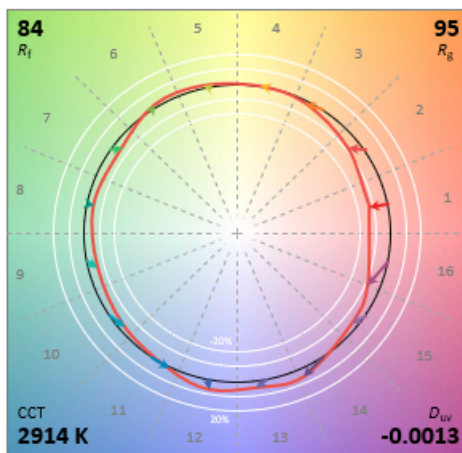
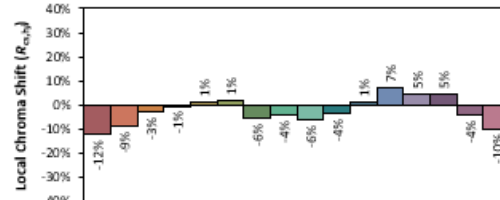
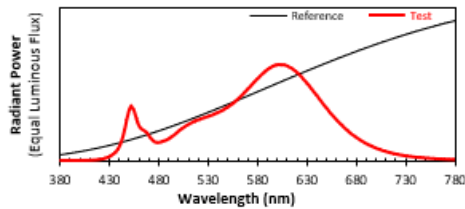
### ANSI/IES TM-30-18 Color Rendition Report

Source: L128-3080RA35000H1

Manufacturer: ASMART LIGHT CO., LTD

Date: 2020/9/11

Model: LED80HIDRSC2MOG(3000K)



Notes: This is a recommended method for displaying ANSI/IES TM-30-18 information.

$x$  0.4411

$y$  0.4021

$u'$  0.2541

$v'$  0.5213

CIE 13.3-1995  
(CRI)

$R_a$  81

$R_g$  0

Colors are for visual orientation purposes only. Created with the ANSI/IES TM-30-18 Calculator Version 2.00.



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## Zonal Lumen Tabulation

### Zonal Lumen Summary

Zone	Lumens	% Lamp	% Luminaire
0-30	306.8	2.7%	2.7%
0-40	722.3	6.3%	6.3%
0-60	2,274.1	20%	20%
60-90	3,560.7	31.3%	31.3%
70-100	3,772.2	33.1%	33.1%
90-120	3,539.5	31.1%	31.1%
0-90	5,834.8	51.3%	51.2%
90-180	5,550.3	48.8%	48.8%
0-180	11,385.1	100%	100%

### Lumens Per Zone

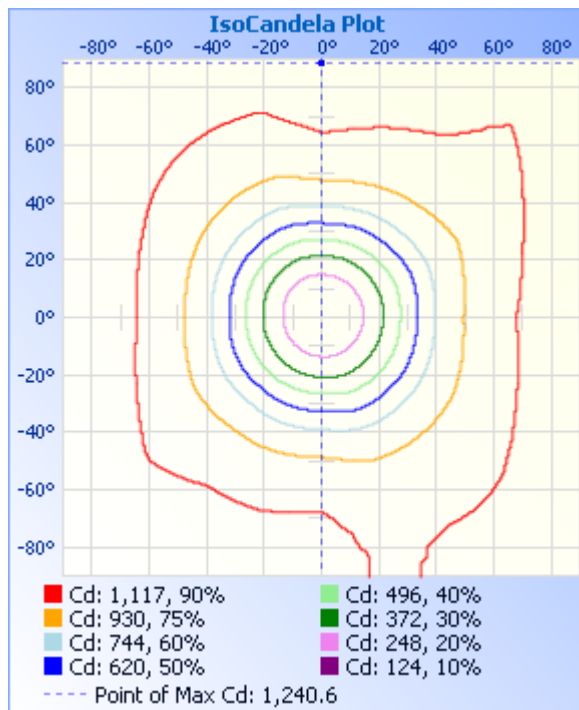
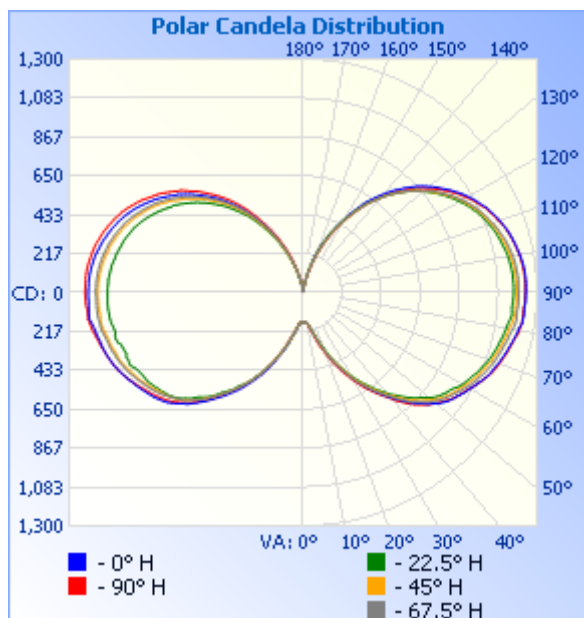
Zone	Lumens	% Total	Zone	Lumens	% Total
0-10	16.8	0.1%	90-100	1,282.8	11.3%
10-20	77.4	0.7%	100-110	1,203.8	10.6%
20-30	212.5	1.9%	110-120	1,052.8	9.2%
30-40	415.5	3.6%	120-130	843.1	7.4%
40-50	662.3	5.8%	130-140	601.6	5.3%
50-60	889.5	7.8%	140-150	361.3	3.2%
60-70	1,071.3	9.4%	150-160	161.6	1.4%
70-80	1,205.9	10.6%	160-170	40.6	0.4%
80-90	1,283.5	11.3%	170-180	2.6	0%



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## Photometric Data







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**Candela Table - Type C**

	112.				157.				202.				247.				292.				337.			
	0	22.5	45	67.5	90	5	135	5	180	5	225	5	270	5	315	5	360							
0	162	162	162	162	162	162	162	162	162	162	162	162	162	162	162	162	162							
1	162	160	161	162	163	162	163	163	163	163	162	162	162	162	163	162	162							
2	161	161	162	163	163	163	164	163	164	163	162	162	162	161	163	162	161							
3	161	162	163	163	164	163	165	165	165	165	164	164	164	161	163	163	161							
4	164	164	164	164	165	165	166	166	168	166	165	165	165	163	164	164	164							
5	165	165	164	166	167	166	169	170	170	169	167	167	166	165	165	165	165							
6	166	166	167	168	170	170	173	175	174	174	171	171	169	167	167	167	167							
7	169	169	170	173	173	176	179	179	179	177	176	176	174	171	171	170	169							
8	172	173	175	177	181	184	187	188	187	182	183	182	179	176	176	175	172							
9	179	180	181	184	190	191	194	196	195	192	191	190	187	182	182	180	179							
10	186	186	187	193	197	204	206	208	205	201	200	201	194	190	189	187	186							
11	195	195	198	204	212	213	217	218	219	215	212	211	205	201	199	195	195							
12	205	205	206	211	226	227	229	231	231	228	225	222	215	211	210	207	205							
13	215	216	219	228	235	241	242	245	242	240	236	235	228	222	222	219	215							
14	229	228	233	241	250	256	260	260	258	255	253	250	244	235	236	230	229							
15	242	242	247	254	267	273	278	276	276	270	270	264	260	254	250	245	242							
16	260	257	262	271	285	289	294	293	295	288	284	280	274	268	266	261	260							
17	275	275	277	290	302	307	309	314	313	305	300	299	293	283	284	279	275							
18	293	293	298	307	318	326	329	331	330	321	319	317	312	298	302	296	293							
19	314	311	320	325	335	344	348	347	348	339	337	335	330	317	320	312	314							
20	333	329	339	344	357	364	370	366	367	355	358	354	350	338	339	334	333							
21	355	347	358	366	378	383	393	386	386	373	380	373	369	360	359	354	355							
22	376	370	377	386	399	403	412	407	407	394	398	395	390	382	381	374	376							
23	397	392	397	406	421	424	432	430	430	415	416	416	410	400	401	395	397							
24	419	412	416	425	441	443	454	451	451	432	436	435	430	417	422	416	419							
25	439	432	437	445	461	466	474	470	472	452	455	454	452	437	443	440	439							
26	462	451	456	466	482	487	495	493	494	471	475	474	475	457	466	461	462							
27	484	472	478	488	503	510	516	513	514	491	497	494	496	479	486	483	484							
28	506	493	500	509	524	531	537	535	534	511	519	514	516	500	506	504	506							
29	527	514	524	531	546	550	562	555	555	532	538	537	537	520	527	526	527							

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31	572	556	567	574	588	589	604	596	595	573	577	577	580	559	569	566	572
32	594	576	587	596	611	608	624	617	616	591	595	597	602	580	590	587	594
33	616	596	607	615	632	628	643	636	637	610	615	616	621	599	609	608	616
34	637	616	626	635	651	646	662	654	656	622	636	636	642	618	630	629	637
35	658	635	647	657	670	668	684	673	674	642	654	655	661	638	650	650	658
36	681	655	666	675	690	688	703	693	694	668	673	674	682	656	670	672	681
37	700	675	685	697	711	707	723	714	715	683	693	695	700	675	689	692	700
38	721	693	707	716	731	727	744	733	733	699	712	712	721	695	709	712	721
39	743	713	726	736	752	748	767	752	752	716	731	731	744	715	732	733	743
40	764	732	746	755	775	770	786	774	772	741	751	752	763	734	751	754	764
41	784	754	765	777	799	790	807	795	792	759	770	773	785	753	772	774	784
42	806	769	786	799	819	808	829	814	814	780	788	793	806	771	792	796	806
43	829	789	806	819	842	826	846	835	832	794	807	812	825	789	814	818	829
44	847	807	826	840	862	843	866	852	852	809	826	829	845	809	834	841	847
45	868	826	848	862	881	861	884	869	871	821	844	847	865	826	854	860	868
46	890	844	862	875	898	880	897	888	893	845	859	862	884	844	873	878	890
47	907	862	880	894	915	893	919	905	906	867	876	881	899	861	890	898	907
48	927	874	896	912	932	909	934	924	924	880	893	896	917	877	905	916	927
49	944	892	912	929	946	925	952	939	940	898	907	907	929	890	924	931	944
50	962	910	928	941	959	937	966	950	956	912	922	918	944	903	936	947	962
51	977	926	943	956	973	948	978	961	971	924	933	930	957	917	947	961	977
52	991	941	958	969	985	958	988	974	983	934	941	942	969	926	956	973	991
53	1005	952	972	980	998	967	999	985	993	944	952	953	980	934	965	984	1005
54	1015	961	981	990	1011	978	1007	994	1003	950	959	966	989	941	975	991	1015
55	1025	971	992	1000	1022	989	1019	1004	1013	957	966	976	1001	950	985	1000	1025
56	1032	978	1000	1009	1033	996	1027	1017	1021	965	974	988	1010	959	997	1012	1032
57	1043	985	1009	1021	1042	1006	1038	1025	1030	972	985	996	1019	968	1006	1021	1043
58	1053	100	101	103	104	1014	104	1034	103	980	994	1004	102	978	101	1031	1053

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59	1062	101 3	102 7	104 0	105 8	1024	105 9	1042	104 7	987	100 3	1013	103 8	986	102 7	1039	1062
60	1070	102 2	103 5	105 0	106 9	1033	107 0	1050	105 5	995	101 1	1022	104 8	995	103 8	1048	1070
61	1080	103 1	104 5	106 1	108 0	1042	107 8	1059	106 3	997	102 1	1029	105 8	1003	104 7	1057	1080
62	1090	103 7	105 2	106 8	109 1	1049	108 6	1067	107 1	1001	102 9	1038	106 7	1011	105 5	1067	1090
63	1099	104 5	106 2	107 7	110 1	1060	109 4	1075	107 9	1004	103 6	1046	107 8	1018	106 4	1077	1099
64	1110	105 2	107 0	108 5	111 1	1067	110 0	1083	108 8	1010	104 3	1054	108 7	1026	107 1	1086	1110
65	1119	106 2	107 9	109 5	112 1	1076	110 9	1091	109 6	1018	105 2	1063	109 6	1031	107 8	1093	1119
66	1128	106 9	108 3	110 2	113 1	1083	111 5	1099	110 5	1027	106 1	1069	110 4	1039	108 6	1100	1128
67	1136	107 6	109 1	111 0	113 9	1089	112 3	1105	111 3	1042	106 7	1077	111 4	1044	109 3	1109	1136
68	1140	108 3	109 7	111 6	114 7	1098	112 9	1113	111 9	1044	107 4	1083	112 0	1052	110 1	1116	1140
69	1147	109 1	110 5	112 3	115 4	1103	113 7	1121	112 7	1042	108 1	1089	112 7	1061	110 6	1122	1147
70	1155	109 8	111 4	112 9	116 0	1108	114 3	1125	113 2	1047	108 7	1095	113 3	1064	111 3	1127	1155
71	1161	110 4	111 8	113 4	116 6	1114	114 9	1130	113 8	1040	109 0	1100	114 0	1070	111 8	1134	1161
72	1167	110 9	112 3	113 9	117 1	1120	115 6	1137	114 3	1045	109 4	1104	114 5	1075	112 3	1141	1167
73	1174	111 4	112 9	114 4	117 7	1123	116 1	1142	114 8	1049	109 8	1110	115 1	1078	112 9	1147	1174
74	1179	111 9	113 6	115 1	118 3	1129	116 4	1146	115 3	1052	110 4	1115	115 5	1082	113 3	1154	1179
75	1185	112 4	114 0	115 5	118 8	1133	116 9	1150	115 8	1068	111 0	1118	116 1	1086	114 0	1159	1185
76	1190	112	114	116	119	1136	117	1156	116	1072	111	1122	116	1091	114	1165	1190

Laboratory: Belling Test Laboratory Co., LTD A2LA Certificate# 4810.01

Unit 401, No. 309 Xinxin Seven Road, Zengcheng District,  
Guangzhou, People's Republic of China. [info@bellingtest.com](mailto:info@bellingtest.com)

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77	1198	113 3	115 0	116 7	119 9	1142	117 7	1158	116 4	1074	111 4	1126	117 1	1094	114 9	1169	1198
78	1202	113 8	115 5	116 9	120 6	1148	118 4	1162	116 9	1067	112 1	1131	117 7	1099	115 4	1174	1202
79	1209	114 1	115 9	117 5	121 5	1153	119 3	1168	117 3	1070	112 5	1138	118 3	1105	115 9	1177	1209
80	1214	114 6	116 3	118 3	121 9	1159	119 5	1174	117 7	1074	113 2	1143	119 1	1112	116 6	1185	1214
81	1220	115 0	116 9	118 9	122 2	1162	119 6	1178	118 2	1081	113 5	1142	119 5	1115	116 8	1194	1220
82	1229	115 6	117 5	119 3	122 9	1162	120 1	1181	118 9	1083	113 6	1146	119 9	1118	117 3	1196	1229
83	1230	116 2	118 0	119 6	122 9	1161	120 1	1182	119 8	1085	113 6	1149	120 5	1119	117 5	1201	1230
84	1234	116 8	118 3	119 4	122 9	1163	120 3	1186	119 6	1086	113 5	1151	120 4	1121	117 6	1200	1234
85	1234	116 5	118 5	119 4	122 8	1167	120 2	1184	119 4	1088	113 7	1150	120 4	1124	117 8	1198	1234
86	1232	116 4	118 5	119 6	123 0	1171	120 4	1185	119 5	1089	114 0	1152	120 6	1124	118 1	1201	1232
87	1236	116 6	118 5	119 9	123 3	1167	120 4	1184	119 3	1089	114 1	1152	121 0	1125	118 1	1206	1236
88	1238	116 8	118 6	119 8	123 3	1167	120 4	1184	119 4	1089	114 1	1151	121 0	1125	118 3	1203	1238
89	1238	117 0	118 5	119 9	123 4	1168	120 4	1184	119 5	1087	114 2	1151	121 2	1126	118 3	1205	1238
90	1238	117 0	118 6	119 9	123 6	1169	120 5	1183	119 5	1088	114 2	1153	121 3	1127	118 5	1203	1238
91	1240	117 2	118 7	119 8	123 6	1170	120 4	1184	119 4	1087	114 1	1152	121 3	1126	118 4	1203	1240
92	124 1	117 1	118 7	119 9	123 6	1168	120 2	1183	119 4	1086	114 0	1151	121 2	1126	118 4	1204	124 1
93	1240	117 0	118 8	119 8	123 6	1167	120 0	1180	119 4	1085	114 0	1151	121 2	1126	118 3	1206	1240
94	1239	116	118	119	123	1165	120	1179	119	1086	113	1150	121	1124	118	1205	1239

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96	1236	116 8	118 4	119 4	123 2	1162	119 6	1177	118 8	1080	113 3	1146	121 0	1121	117 9	1202	1236
97	1234	116 5	118 1	119 2	123 0	1158	119 3	1173	118 6	1077	113 1	1144	120 7	1120	117 8	1201	1234
98	1231	116 3	117 8	119 1	122 7	1156	119 0	1170	118 1	1075	112 8	1140	120 4	1116	117 5	1198	1231
99	1227	116 0	117 5	118 7	122 4	1152	118 7	1166	117 8	1071	112 4	1137	120 0	1115	117 1	1196	1227
10 0	1223	115 7	117 2	118 4	122 2	1149	118 2	1162	117 5	1065	112 0	1134	119 7	1110	116 9	1191	1223
10 1	1218	115 3	116 7	117 9	121 8	1145	118 0	1157	117 0	1062	111 6	1129	119 3	1105	116 6	1187	1218
10 2	1214	114 9	116 3	117 4	121 3	1141	117 5	1153	116 3	1059	111 0	1125	118 9	1101	116 1	1184	1214
10 3	1209	114 4	116 0	117 0	120 8	1135	116 8	1149	115 8	1053	110 7	1119	118 5	1096	115 6	1179	1209
10 4	1204	113 9	115 4	116 5	120 2	1128	116 2	1143	115 3	1048	110 2	1116	117 9	1094	115 2	1176	1204
10 5	1199	113 4	114 8	116 0	119 8	1123	115 8	1136	114 6	1043	109 5	1109	117 2	1087	114 7	1170	1199
10 6	1194	112 9	114 3	115 3	119 1	1117	115 2	1128	113 9	1040	108 9	1102	116 7	1082	114 0	1164	1194
10 7	1188	112 3	113 7	114 5	118 7	1111	114 4	1122	113 2	1034	108 3	1096	116 1	1078	113 4	1156	1188
10 8	1181	111 8	113 1	114 0	117 9	1105	113 6	1114	112 6	1026	107 4	1089	115 3	1072	112 7	1151	1181
10 9	1173	111 1	112 5	113 3	117 0	1098	112 8	1107	111 8	1020	106 8	1082	114 5	1067	112 1	1144	1173
11 0	1165	110 4	111 6	112 5	116 2	1092	112 1	1100	110 9	1013	106 1	1073	113 7	1059	111 3	1135	1165
11 1	1159	109 7	110 8	111 7	115 3	1084	111 2	1091	110 1	1007	105 1	1067	113 0	1051	110 6	1128	1159
11	1149	108	109	110	114	1075	110	1084	109	998	104	1058	112	1044	109	1123	1149

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4		3	5	2	7		5		4		6		3		2		
11	1123	106	107	108	111	1048	107	1054	106	971	101	1030	109	1022	107	1094	1123
5		5	4	2	9		4		2		4		2		4		
11	1110	105	106	107	110	1037	106	1043	105	959	100	1018	108	1012	106	1085	1110
6		3	5	3	5		3		2		5		1		5		
11	1099	104	105	106	109	1025	105	1030	104	949	993	1008	106	1001	105	1073	1099
7		5	4	1	3		2		0				9		4		
11	1089	103	104	105	108	1014	103	1020	102	937	983	997	105	990	104	1064	1089
8		3	3	2	2		9		7				8		3		
11	1077	102	103	104	107	1004	103	1008	101	927	971	984	104	980	103	1053	1077
9		3	3	0	0		0		5				6		4		
12	1065	101	102	102	105	990	101	995	100	915	960	974	103	970	102	1042	1065
0		1	2	8	6		7		3				3		1		
12	1053	999	101	101	104	978	100	981	990	903	947	962	101	958	100	1030	1053
1			1	6	2		5						8		8		
12	1039	989	998	100	103	966	990	968	976	891	935	950	100	946	997	1019	1039
2				3	1								3				
12	1025	974	985	990	101	951	975	955	963	876	920	936	991	932	985	1005	1025
3					7												
12	1011	962	971	976	100	938	961	941	947	871	907	924	979	920	972	991	1011
4					1												
12	997	950	957	961	985	925	946	926	932	854	893	908	964	906	956	978	997
5																	
12	981	936	943	948	970	912	929	909	917	840	876	895	948	890	942	965	981
6																	
12	965	922	928	933	955	892	914	898	899	825	859	879	931	882	928	950	965
7																	
12	952	908	913	920	938	883	897	881	889	811	848	862	916	866	913	935	952
8																	
12	936	893	897	902	922	865	883	864	871	797	832	849	898	852	897	918	936
9																	
13	919	876	881	885	902	849	866	845	854	782	815	832	888	836	882	898	919

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0																	
13	903	864	864	866	889	832	849	829	837	766	800	816	866	822	865	885	903
1																	
13	888	847	853	852	870	816	832	811	818	749	782	799	846	808	850	869	888
2																	
13	869	832	832	833	850	800	811	792	799	732	765	781	830	792	832	850	869
3																	
13	849	813	816	816	829	780	793	775	781	716	747	763	812	774	815	833	849
4																	
13	829	795	796	796	810	763	775	756	760	699	729	745	790	758	796	813	829
5																	
13	810	776	778	776	787	746	754	737	741	682	709	726	771	740	776	795	810
6																	
13	789	760	759	757	769	728	735	718	722	665	692	708	750	724	761	776	789
7																	
13	770	740	740	738	750	707	716	699	704	648	675	690	731	705	740	759	770
8																	
13	749	720	720	720	726	686	696	679	683	628	655	670	712	687	719	738	749
9																	
14	727	700	702	699	705	667	674	658	662	609	636	650	690	669	702	719	727
0																	
14	705	682	678	677	682	645	654	638	641	591	615	632	672	649	679	697	705
1																	
14	683	660	657	656	659	625	633	616	621	571	595	611	649	630	658	675	683
2																	
14	662	640	636	635	638	605	612	592	598	551	575	588	627	611	639	654	662
3																	
14	638	619	616	614	616	585	591	571	576	532	557	568	605	591	617	634	638
4																	
14	618	599	594	590	591	562	568	549	553	510	534	548	580	572	595	612	618
5																	
14	593	575	571	566	567	539	544	525	527	490	512	526	558	552	570	587	593
6																	
14	567	552	546	544	541	517	519	501	504	469	488	501	533	530	546	565	567
7																	
14	541	528	522	517	517	492	495	480	481	446	465	479	508	509	520	540	541

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8																	
14	517	505	499	496	494	468	472	457	458	423	443	457	485	489	496	518	517
9																	
15	490	484	475	472	469	446	448	432	436	403	420	435	458	470	473	493	490
0																	
15	466	461	449	448	444	425	425	410	411	382	399	412	436	450	449	470	466
1																	
15	443	439	425	426	421	401	399	387	388	360	376	390	414	430	426	448	443
2																	
15	419	418	403	403	395	380	376	364	363	340	355	369	391	408	404	424	419
3																	
15	396	395	381	380	372	358	353	339	341	320	334	345	368	382	380	400	396
4																	
15	372	374	356	355	349	334	330	317	317	298	310	323	345	358	358	373	372
5																	
15	348	352	335	332	325	308	308	295	295	275	288	300	322	334	335	353	348
6																	
15	325	330	310	306	301	283	285	272	270	252	266	278	300	310	312	328	325
7																	
15	303	306	287	284	276	263	260	248	249	233	245	256	277	284	290	304	303
8																	
15	280	284	266	260	254	241	239	227	228	215	224	237	256	261	267	280	280
9																	
16	258	261	245	239	232	221	218	207	206	195	205	216	235	239	245	258	258
0																	
16	236	237	224	219	209	200	197	186	185	175	185	196	213	219	225	236	236
1																	
16	214	211	199	199	187	180	174	166	165	156	166	175	193	197	204	214	214
2																	
16	192	189	178	177	166	158	156	147	146	138	147	155	172	177	185	192	192
3																	
16	171	168	159	153	147	139	137	129	125	121	128	139	153	155	168	172	171
4																	
16	153	149	139	134	128	120	116	110	109	105	110	119	132	138	148	150	153
5																	
16	133	131	121	118	111	104	100	95	93	90	95	103	114	120	128	130	133

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6																	
16	114	110	103	103	92	88	85	80	79	75	80	88	98	102	110	115	114
7																	
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8																	
16	83	79	71	69	64	59	57	52	51	51	54	59	69	73	79	81	83
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17	66	65	59	58	51	48	44	42	42	40	42	47	55	58	65	66	66
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8																	
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9																	
18	6	6	6	6	5	5	6	6	7	6	6	6	5	6	6	7	6
0																	



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**2.2 Electrical, Photometric and Chromaticity Measurements***(Refer to Work Instruction BL-QP-033)*

<b>Test date</b>	2020-09-11	<b>Test Ambient:</b>	25.2 ° C
<b>Test Orientation</b>	As intended	<b>Stabilization Time (min)</b>	90
<b>Model Number</b>	LED80HIDRSC2MOG(4000K)		

**Electrical Measurement:**

Sample No.	Voltage (Vac)	Frequency (Hz)	Current (A)	Power (W)	Power Factor	THD %
BLC200900	120.1	60	0.675	80.45	0.992	7.82
7E-G2	277.1	60	0.330	82.76	0.904	15.87
<b>DLC Pass Criteria</b>					$\geq 0.9(-3\%)$	$\leq 20(+5)$

**Chromaticity Measurement - Sphere-Spectroradiometer Method:**

Parameter	Result	Special Color Rendering Indices			
Test Voltage (V)	120.0	R1	83	R9	12
Frequency (Hz)	60	R2	92	R10	82
CCT (K)	3747	R3	96	R11	82
Duv	-0.0021	R4	82	R12	66
Chromaticity (x, y)	x=0.3905 y=0.3782	R5	84	R13	86
Chromaticity (u', v')	u(u')=0.2311 v'=0.5037	R6	89	R14	99
Color Rendering Index (CRI)	84	R7	83	R15	77
R9	12	R8	63	--	--
Rf	84				
Rg	95				
Rcs,h1(%)	-12				

**Photometric Measurement – Sphere-Spectroradiometer Method:**

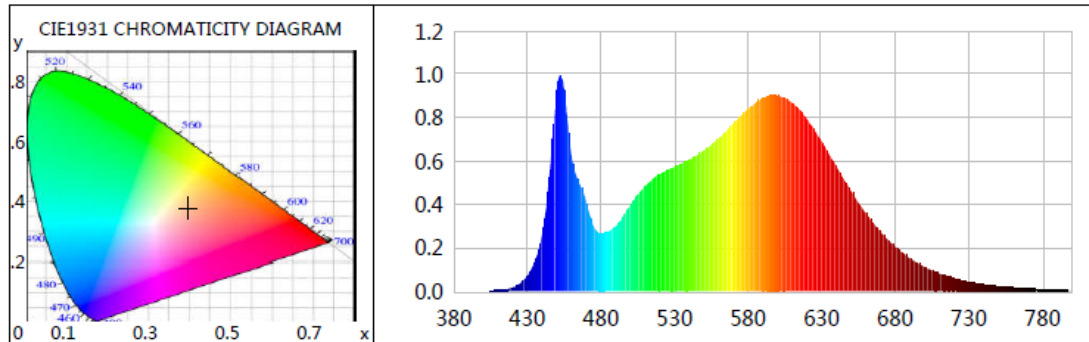
Parameter	Result	
Test Voltage (V)	120.0	277.0
Frequency (Hz)	60	60
Total Luminous (lm)	12473.6	12915.2
Luminous Efficacy (lm/W)	155.05	156.06
Most worst Luminous/Highest Watts	150.72	



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## Spectral Power Distribution & Chromaticity Diagram



WL(nm)	PL	PE(mW/nm)	WL(nm)	PL	PE(mW/nm)	WL(nm)	PL	PE(mW/nm)
380	0.0002	0.0495	525	0.5580	140.8366	670	0.2740	69.1619
385	0.0005	0.1277	530	0.5731	144.6409	675	0.2376	59.9640
390	0.0003	0.0721	535	0.5874	148.2626	680	0.2049	51.7250
395	0.0008	0.2077	540	0.6063	153.0218	685	0.1779	44.8916
400	0.0011	0.2840	545	0.6243	157.5608	690	0.1519	38.3462
405	0.0018	0.4514	550	0.6477	163.4681	695	0.1306	32.9494
410	0.0032	0.7955	555	0.6728	169.8017	700	0.1113	28.0944
415	0.0078	1.9714	560	0.7050	177.9277	705	0.0956	24.1156
420	0.0174	4.3973	565	0.7376	186.1575	710	0.0819	20.6723
425	0.0353	8.9008	570	0.7705	194.4692	715	0.0687	17.3482
430	0.0698	17.6205	575	0.8073	203.7442	720	0.0594	14.9835
435	0.1351	34.0979	580	0.8400	211.9938	725	0.0495	12.4997
440	0.2560	64.6197	585	0.8653	218.3768	730	0.0425	10.7193
445	0.5274	133.1071	590	0.8885	224.2514	735	0.0360	9.0876
450	0.9249	233.4373	595	0.9004	227.2410	740	0.0308	7.7789
455	0.9301	234.7344	600	0.9016	227.5385	745	0.0266	6.7033
460	0.6251	157.7669	605	0.8900	224.6194	750	0.0223	5.6303
465	0.5052	127.5000	610	0.8691	219.3403	755	0.0189	4.7784
470	0.4088	103.1824	615	0.8365	211.1187	760	0.0174	4.3816
475	0.2996	75.6154	620	0.7951	200.6781	765	0.0146	3.6857
480	0.2648	66.8427	625	0.7448	187.9795	770	0.0125	3.1528
485	0.2753	69.4820	630	0.6914	174.4925	775	0.0110	2.7731
490	0.2981	75.2344	635	0.6331	159.7803	780	0.0082	2.0666
495	0.3412	86.1064	640	0.5769	145.6089	785	0.0062	1.5750
500	0.3946	99.6001	645	0.5170	130.4879	790	0.0072	1.8217
505	0.4432	111.8689	650	0.4615	116.4707	795	0.0051	1.2918
510	0.4848	122.3491	655	0.4088	103.1771	800	0.0037	0.9377
515	0.5155	130.0969	660	0.3597	90.7816			
520	0.5380	135.7776	665	0.3146	79.3885			

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## TM30

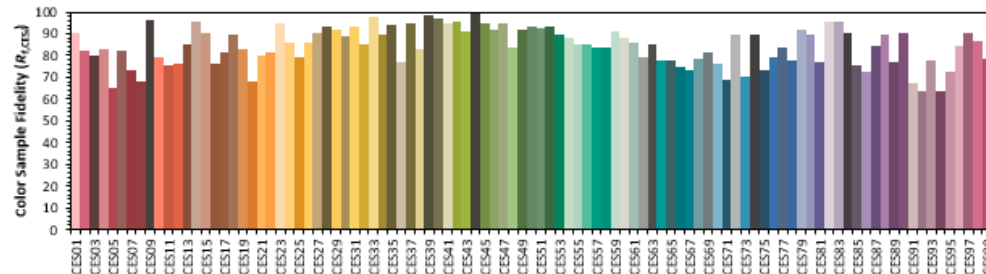
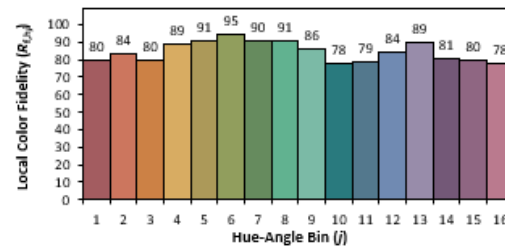
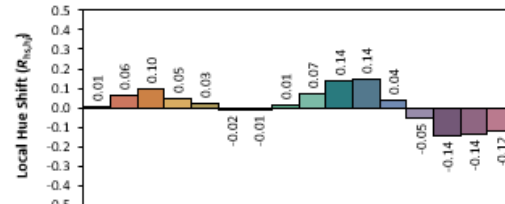
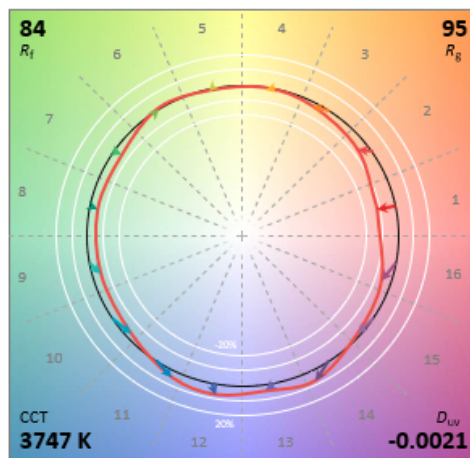
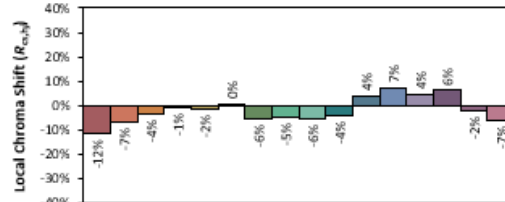
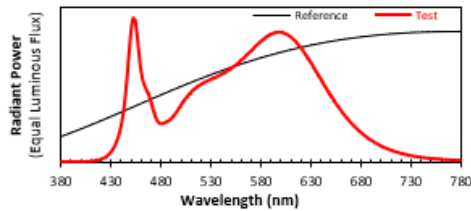
### ANSI/IES TM-30-18 Color Rendition Report

Source: L128-4080RA35000H1

Manufacturer: ASMAIT LIGHT CO., LTD

Date: 2020/9/11

Model: LED80HIDRSC2MDG(4000K)



Notes: This is a recommended method for displaying ANSI/IES TM-30-18 information.

$x$  0.3905  
 $y$  0.3782  
 $u'$  0.2311  
 $v'$  0.5037

CIE 13.3-1995  
(CRI)

$R_a$  84  
 $R_g$  12

Colors are for visual orientation purposes only. Created with the ANSI/IES TM-30-18 Calculator Version 2.00.



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## Zonal Lumen Tabulation

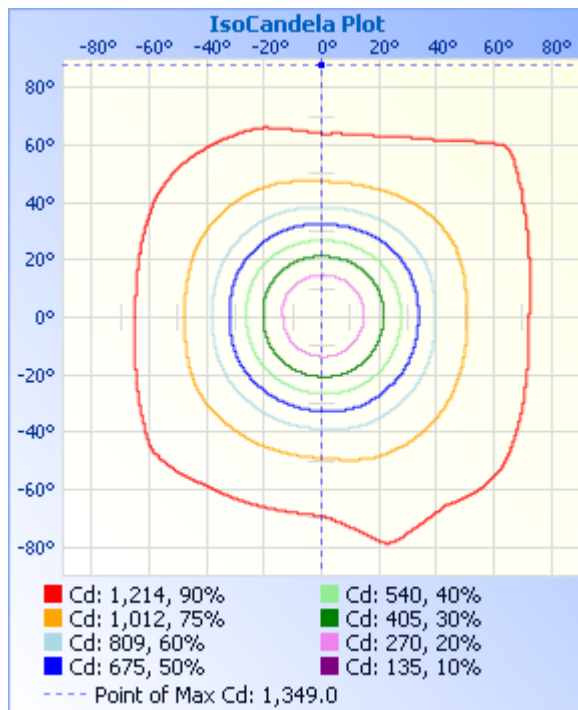
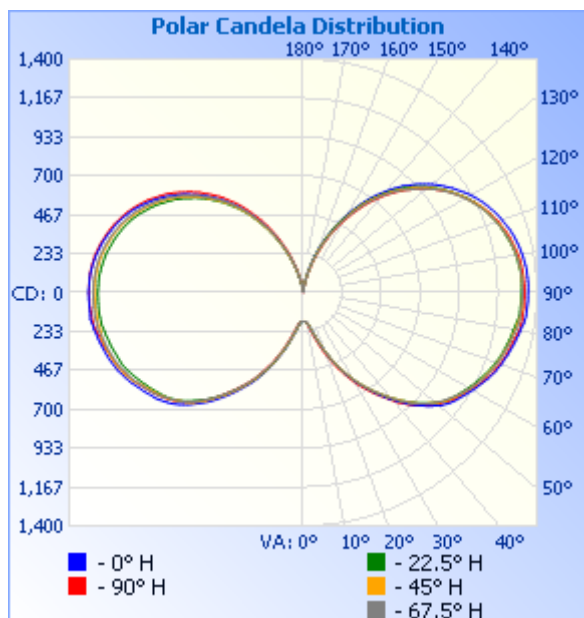
Zonal Lumen Summary				Lumens Per Zone					
Zone	Lumens	% Lamp	% Luminaire	Zone	Lumens	% Total	Zone	Lumens	% Total
0-30	334.2	2.7%	2.7%	0-10	17.9	0.1%	90-100	1,404.1	11.3%
0-40	790.0	6.3%	6.3%	10-20	83.8	0.7%	100-110	1,317.8	10.6%
0-60	2,490.1	20%	20%	20-30	232.4	1.9%	110-120	1,152.8	9.2%
60-90	3,901.7	31.3%	31.3%	30-40	455.8	3.7%	120-130	924.2	7.4%
70-100	4,130.8	33.1%	33.1%	40-50	726.4	5.8%	130-140	660.5	5.3%
90-120	3,874.8	31.1%	31.1%	50-60	973.7	7.8%	140-150	397.8	3.2%
0-90	6,391.8	51.2%	51.2%	60-70	1,175.1	9.4%	150-160	178.3	1.4%
90-180	6,082.8	48.8%	48.8%	70-80	1,321.7	10.6%	160-170	44.5	0.4%
0-180	12,474.6	100%	100%	80-90	1,405.0	11.3%	170-180	2.8	0%



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## Photometric Data





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**Candela Table - Type C**

	112.					157.				202.			247.			292.			337.		
	0	22.5	45	67.5	90	5	135	5	180	5	225	5	270	5	315	5	360				
0	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171	171				
1	171	171	171	171	172	171	172	172	172	172	172	171	171	171	171	172	171				
2	171	172	171	172	171	172	173	173	172	173	171	171	172	172	172	172	171				
3	172	173	172	173	173	172	174	174	175	175	173	173	173	173	172	173	172				
4	174	174	174	174	175	175	176	177	177	177	175	175	175	175	174	174	174				
5	176	175	175	175	177	177	180	181	180	182	179	178	176	176	175	176	176				
6	177	177	176	177	181	182	184	186	184	186	182	182	179	179	178	178	177				
7	180	181	180	182	186	188	190	193	193	192	189	187	184	182	182	181	180				
8	184	185	185	187	193	196	200	202	201	200	197	195	191	187	186	185	184				
9	191	192	192	195	204	205	209	210	210	210	206	203	199	196	193	191	191				
10	199	200	201	204	212	217	220	223	221	221	217	215	207	203	202	200	199				
11	209	210	211	217	227	231	233	236	236	234	230	227	219	215	210	209	209				
12	221	222	223	226	240	245	246	249	250	248	243	238	231	225	223	222	221				
13	234	235	237	241	255	260	260	267	264	262	256	254	243	239	236	235	234				
14	248	250	251	257	273	276	280	284	282	277	276	272	261	254	249	247	248				
15	265	267	266	272	291	294	297	300	301	296	295	287	278	271	267	265	265				
16	283	283	284	290	308	313	317	319	319	315	311	305	294	288	286	283	283				
17	300	301	302	310	327	334	334	340	338	335	329	324	312	305	303	304	300				
18	320	320	321	331	348	352	355	359	359	352	348	344	333	324	323	323	320				
19	342	343	344	351	368	373	376	380	379	372	368	363	355	345	342	344	342				
20	366	367	367	372	390	393	400	401	400	393	392	385	376	369	364	365	366				
21	389	388	389	393	412	417	423	424	421	415	415	407	398	391	388	388	389				
22	412	410	412	417	435	439	445	447	444	439	435	428	420	413	409	412	412				
23	438	434	434	439	459	464	467	471	467	460	457	451	444	436	432	436	438				
24	462	456	456	461	483	485	490	493	491	482	478	473	465	455	454	459	462				
25	485	481	480	483	505	507	513	515	513	502	500	496	487	477	477	483	485				
26	508	503	503	506	527	529	538	538	535	527	524	516	508	499	503	507	508				
27	533	528	527	531	550	555	562	561	558	550	546	538	532	523	526	532	533				
28	557	552	551	554	574	578	585	584	583	571	569	560	555	546	548	555	557				
29	582	577	575	579	599	600	608	608	606	593	592	583	580	571	570	581	582				

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30	608	600	601	601	622	622	631	634	628	615	614	607	603	591	592	603	608
31	632	623	623	625	645	643	655	655	648	634	637	629	625	614	616	627	632
32	652	645	647	650	668	666	677	677	668	655	659	650	646	635	638	650	652
33	676	667	669	672	690	687	698	697	691	675	679	671	665	657	661	675	676
34	699	691	691	694	711	708	719	718	715	696	701	692	688	678	684	696	699
35	724	713	713	716	735	731	740	739	735	715	722	714	710	700	706	721	724
36	749	737	735	737	756	752	765	763	757	736	744	735	731	723	728	745	749
37	770	758	756	757	777	772	787	783	778	760	765	756	753	744	751	764	770
38	794	781	780	781	799	797	809	806	801	781	785	777	777	764	774	788	794
39	818	803	802	806	823	821	832	827	824	801	806	800	798	786	796	812	818
40	839	825	824	827	848	843	857	851	846	821	828	822	823	808	819	837	839
41	864	845	847	852	874	865	876	880	868	841	853	844	845	832	842	862	864
42	883	871	868	873	892	882	901	898	887	863	873	859	867	854	870	880	883
43	910	887	891	896	915	905	920	917	906	880	892	883	883	874	889	907	910
44	933	911	912	916	938	924	939	939	927	899	912	904	906	893	910	930	933
45	953	931	936	937	959	942	961	959	947	917	934	924	926	914	931	952	953
46	974	952	955	956	976	960	979	978	966	935	950	943	945	931	951	971	974
47	995	971	974	975	995	979	998	996	983	953	964	960	962	951	970	993	995
48	1016	991	993	995	1012	997	1015	1012	1002	970	973	973	979	966	988	1012	1016
49	1035	1008	1010	1011	1029	1014	1031	1027	1018	985	988	990	993	982	1005	1032	1035
50	1056	1026	1026	1026	1044	1028	1046	1041	1033	998	1003	1002	1006	996	1020	1049	1056
51	1072	1043	1046	1041	1056	1038	1059	1053	1046	1011	1016	1016	1021	1011	1032	1065	1072
52	1086	1060	1062	1055	1069	1052	1070	1065	1058	1024	1029	1028	1033	1019	1044	1078	1086
53	1099	1074	1076	1067	1084	1062	1082	1076	1070	1034	1039	1041	1045	1028	1057	1088	1099
54	1111	1085	1086	1080	1097	1074	1093	1087	1083	1043	1051	1056	1056	1038	1066	1100	1111
55	1121	1095	1099	1093	1110	1083	1106	1098	1091	1051	1061	1067	1066	1047	1077	1113	1121

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56	113 1	110 5	111 0	110 5	111 9	1094	111 6	1109	109 9	1060	106 9	1078	107 8	1057	109 0	1125	113 1
57	114 0	111 3	112 0	111 7	113 0	1104	112 6	1120	111 1	1070	108 0	1087	108 8	1066	110 0	1134	114 0
58	115 0	112 3	113 1	112 9	113 8	1114	113 6	1130	112 0	1080	108 9	1097	109 7	1078	111 2	1145	115 0
59	116 0	113 4	114 1	113 9	114 8	1122	114 7	1141	112 9	1087	110 1	1107	110 8	1086	112 2	1155	116 0
60	117 1	114 3	115 2	115 1	116 0	1133	115 8	1150	113 8	1096	111 0	1116	111 8	1097	113 3	1166	117 1
61	118 1	115 2	116 2	116 2	117 0	1142	116 8	1160	114 8	1106	112 3	1125	112 8	1107	114 3	1175	118 1
62	119 1	116 0	117 2	117 0	118 3	1152	117 9	1168	115 9	1115	114 1	1136	113 9	1116	115 4	1185	119 1
63	120 0	116 9	117 9	118 1	119 4	1162	118 8	1177	116 8	1122	115 2	1144	115 0	1124	116 3	1195	120 0
64	120 9	117 8	118 8	119 0	120 4	1171	119 5	1187	117 6	1131	116 1	1153	115 9	1133	117 3	1204	120 9
65	122 1	118 9	119 6	119 9	121 3	1179	120 4	1197	118 4	1140	117 0	1160	116 7	1142	118 0	1214	122 1
66	122 9	119 6	120 4	120 7	122 4	1189	121 3	1205	119 4	1148	117 7	1168	117 6	1150	118 9	1221	122 9
67	123 8	120 5	121 3	121 5	123 3	1198	122 1	1213	120 2	1156	118 5	1176	118 4	1158	119 8	1231	123 8
68	124 7	121 2	122 0	122 3	123 9	1207	122 7	1222	120 8	1164	119 2	1185	119 2	1166	120 5	1239	124 7
69	125 3	122 2	122 9	123 1	124 7	1213	123 4	1228	121 4	1169	119 9	1190	119 9	1172	121 2	1247	125 3
70	126 2	122 8	123 6	123 7	125 4	1217	124 0	1234	122 1	1172	120 4	1196	120 4	1179	121 7	1255	126 2
71	126 7	123 4	124 2	124 4	126 0	1224	124 7	1240	122 8	1177	121 0	1202	121 0	1184	122 3	1260	126 7
72	127 3	124 0	124 7	124 9	126 7	1229	125 3	1246	123 2	1180	121 5	1206	121 5	1188	122 8	1266	127 3
73	128 0	124 6	125 3	125 5	127 2	1234	125 7	1251	123 7	1186	121 9	1212	122 0	1192	123 4	1272	128 0

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74	128 6	125 1	125 8	126 0	127 6	1241	126 2	1255	124 2	1191	122 5	1217	122 8	1198	123 7	1278	128 6
75	129 2	125 6	126 4	126 6	128 3	1244	126 9	1261	124 7	1196	122 8	1222	123 3	1203	124 5	1284	129 2
76	129 8	126 1	126 9	127 2	128 7	1250	127 4	1265	125 1	1198	123 4	1225	123 9	1204	125 1	1289	129 8
77	130 4	126 6	127 5	127 7	129 2	1254	127 7	1269	125 7	1204	123 7	1229	124 1	1211	125 5	1296	130 4
78	130 8	127 1	128 0	128 1	129 9	1260	128 3	1276	126 1	1208	123 4	1235	124 8	1216	126 1	1299	130 8
79	131 5	127 6	128 2	128 7	130 6	1267	129 0	1282	126 5	1211	123 5	1242	125 6	1221	126 6	1305	131 5
80	131 9	127 9	128 9	129 4	131 3	1272	129 4	1287	127 1	1216	123 5	1248	126 2	1227	127 4	1312	131 9
81	132 5	128 6	129 4	130 1	131 8	1277	129 6	1291	127 4	1222	124 1	1249	127 0	1234	127 9	1320	132 5
82	133 4	129 0	129 8	130 5	132 0	1279	130 2	1294	127 9	1223	124 3	1250	127 1	1238	128 4	1324	133 4
83	133 8	129 7	130 4	130 8	132 1	1281	130 2	1295	128 5	1225	124 4	1253	127 4	1239	128 4	1329	133 8
84	134 3	130 2	131 0	130 7	132 1	1281	130 3	1296	128 2	1228	124 4	1256	127 4	1242	128 8	1331	134 3
85	134 3	130 4	131 1	130 7	132 2	1284	130 3	1293	128 2	1228	124 5	1255	127 6	1241	129 0	1332	134 3
86	134 3	130 3	131 3	131 0	132 4	1287	130 5	1296	128 3	1228	124 7	1257	128 0	1242	129 4	1335	134 3
87	134 5	130 5	131 3	131 2	132 5	1283	130 7	1296	128 3	1228	124 8	1257	128 2	1245	129 4	1334	134 5
88	134 7	130 8	131 3	131 3	132 4	1283	130 5	1297	128 4	1229	124 8	1257	128 0	1242	129 3	1336	134 7
89	134 7	130 8	131 4	131 4	132 6	1283	130 6	1297	128 4	1229	124 9	1257	128 2	1245	129 4	1337	134 7
90	134 7	130 9	131 4	131 5	132 6	1283	130 7	1296	128 5	1230	124 9	1259	128 3	1246	129 6	1339	134 7
91	134 8	130 9	131 4	131 4	132 6	1285	130 5	1296	128 5	1229	124 9	1257	128 1	1246	129 4	1337	134 8

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92	134 9	130 9	131 5	131 3	132 5	1283	130 3	1294	128 3	1227	124 9	1256	128 3	1246	129 4	1336	134 9
93	134 8	131 0	131 4	131 4	132 4	1283	130 3	1295	128 2	1227	124 9	1255	128 3	1244	129 6	1337	134 8
94	134 7	130 9	131 2	131 2	132 3	1280	130 2	1292	128 1	1227	124 7	1254	128 2	1244	129 5	1336	134 7
95	134 5	131 0	131 1	131 0	132 1	1280	130 0	1290	128 0	1225	124 5	1252	128 1	1242	129 5	1333	134 5
96	134 6	130 7	130 9	130 9	131 9	1277	129 7	1289	127 6	1220	124 3	1250	127 9	1239	129 3	1333	134 6
97	134 2	130 3	130 8	130 7	131 7	1274	129 5	1286	127 3	1219	124 0	1248	127 6	1238	129 0	1331	134 2
98	133 8	130 0	130 5	130 4	131 4	1271	129 2	1280	127 0	1214	123 5	1245	127 4	1236	128 7	1328	133 8
99	133 5	129 8	130 3	130 1	131 2	1267	128 8	1278	126 6	1211	123 3	1242	126 9	1231	128 2	1326	133 5
100	133 1	129 5	129 8	129 7	130 7	1264	128 3	1273	126 2	1207	122 9	1237	126 8	1227	128 0	1322	133 1
101	132 7	129 0	129 3	129 2	130 3	1259	127 8	1269	125 7	1203	122 4	1231	126 2	1223	127 6	1318	132 7
102	132 3	128 5	128 9	128 9	129 7	1255	127 2	1262	125 1	1197	121 9	1226	125 7	1219	127 1	1315	132 3
103	131 9	128 0	128 5	128 3	129 1	1249	126 6	1255	124 6	1191	121 2	1221	125 2	1214	126 6	1309	131 9
104	131 2	127 5	127 8	127 8	128 6	1242	126 1	1250	124 0	1185	120 7	1216	124 6	1209	126 1	1303	131 2
105	130 8	126 7	127 2	127 1	128 1	1236	125 5	1243	123 3	1179	120 0	1208	123 9	1202	125 6	1297	130 8
106	130 1	126 2	126 6	126 4	127 4	1228	124 7	1236	122 6	1174	119 5	1202	123 3	1195	124 8	1292	130 1
107	129 5	125 6	126 0	125 7	126 8	1223	124 0	1230	121 8	1166	118 8	1194	122 6	1190	124 1	1285	129 5
108	128 6	125 0	125 3	125 1	125 8	1215	123 1	1219	120 9	1160	118 1	1187	121 9	1184	123 6	1278	128 6
109	127 7	124 3	124 6	124 1	125 1	1208	122 4	1212	120 2	1151	117 1	1178	121 1	1177	122 9	1270	127 7

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11	127	123	123	123	124	1200	121	1204	119	1144	116	1172	120	1169	122	1261	127
0	0	4	7	4	6		5		3		4		3		0		0
11	126	122	122	122	123	1191	120	1195	118	1136	115	1162	119	1161	121	1255	126
1	2	5	7	6	5		7		5		5		3		3		2
11	125	121	121	121	122	1184	119	1185	117	1127	114	1153	118	1153	120	1245	125
2	4	8	8	6	3		8		6		6		4		3		4
11	124	121	121	120	121	1173	118	1173	116	1117	113	1144	117	1145	119	1235	124
3	4	0	1	5	7		7		6		6		5		5		4
11	123	120	120	119	120	1163	117	1164	115	1107	112	1132	116	1136	118	1227	123
4	4	0	2	7	6		5		5		5		5		6		4
11	122	119	119	118	119	1152	116	1152	114	1096	111	1123	115	1126	117	1216	122
5	4	0	2	7	4		6		4		4		5		6		4
11	121	117	118	117	118	1142	115	1140	113	1086	110	1113	114	1114	116	1204	121
6	3	9	1	4	3		4		3		2		5		6		3
11	120	116	116	116	117	1128	114	1129	112	1071	109	1099	113	1102	115	1192	120
7	2	7	8	2	1		0		0		0		3		4		2
11	119	115	115	115	115	1117	112	1116	110	1060	108	1088	112	1091	114	1182	119
8	0	7	6	1	8		8		6		0		0		3		0
11	117	114	114	114	114	1104	111	1103	109	1048	106	1075	110	1079	113	1171	117
9	8	5	3	0	4		6		3		8		8		1		8
12	116	113	113	112	113	1090	110	1087	107	1035	105	1061	109	1067	111	1157	116
0	4	3	1	6	1		4		9		3		4		9		4
12	115	111	111	111	111	1077	108	1075	106	1023	104	1048	108	1053	110	1144	115
1	1	9	9	4	8		8		6		1		2		4		1
12	113	110	110	109	110	1062	107	1061	105	1008	102	1035	106	1040	109	1129	113
2	7	6	5	9	4		3		1		6		6		1		7
12	112	109	109	108	108	1049	105	1045	103	993	101	1021	105	1026	107	1115	112
3	1	2	0	6	8		8		5		2		1		8		1
12	110	107	107	107	107	1033	104	1031	102	980	997	1005	103	1013	106	1101	110
4	6	7	6	0	4		3		0				7		3		6
12	109	106	106	105	105	1019	102	1016	100	965	981	991	102	999	104	1086	109
5	4	3	1	6	8		6		5				3		9		4
12	107	104	104	104	104	1002	101	999	987	951	966	976	100	985	103	1071	107
6	6	9	6	0	2		1						9		4		6
12	106	103	103	102	102	987	993	980	970	934	949	958	992	969	101	1055	106
7	1	5	0	5	4										8		1

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12	104	101	101	100	100	970	976	963	954	918	930	942	974	953	100	1037	104
8	5	7	3	7	6										2		5
12	102	100	996	989	990	953	956	947	937	899	915	924	957	938	985	1020	102
9	8	1															8
13	101	985	978	971	970	937	939	928	916	880	897	907	938	920	968	1004	101
0	1																1
13	993	969	960	953	952	918	920	909	898	868	879	887	921	906	949	985	993
1																	
13	973	952	942	935	932	899	901	887	879	850	860	867	905	888	931	968	973
2																	
13	955	931	923	914	913	879	877	871	861	831	841	852	883	873	911	946	955
3																	
13	934	913	904	892	891	863	861	851	841	811	822	831	867	854	892	925	934
4																	
13	914	891	882	873	873	842	838	828	821	793	800	813	845	834	876	905	914
5																	
13	892	875	859	857	851	821	818	808	799	772	781	791	824	815	854	881	892
6																	
13	875	853	843	836	829	802	798	787	778	753	761	771	805	795	834	865	875
7																	
13	851	828	823	815	806	781	776	767	757	734	742	752	784	774	814	845	851
8																	
13	828	809	801	791	784	759	754	744	736	714	719	730	765	756	792	822	828
9																	
14	805	786	777	771	762	736	733	723	714	690	699	709	742	734	770	800	805
0																	
14	782	763	756	749	736	714	711	700	690	668	678	685	718	712	749	778	782
1																	
14	758	739	733	725	714	693	686	676	668	648	654	664	696	691	722	754	758
2																	
14	735	715	709	700	690	671	662	651	646	625	630	643	674	670	702	731	735
3																	
14	710	696	686	676	666	646	639	628	621	602	609	619	651	649	677	706	710
4																	
14	686	670	661	652	639	623	615	604	596	579	586	592	628	625	652	682	686
5																	

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14	659	644	638	628	613	598	589	578	572	557	560	570	600	602	627	655	659
6																	
14	633	621	612	599	588	572	563	553	547	531	536	546	576	578	605	628	633
7																	
14	605	594	585	572	560	547	538	528	519	505	512	519	548	557	581	603	605
8																	
14	578	569	560	547	534	520	513	501	493	481	488	496	524	531	556	577	578
9																	
15	554	541	531	522	507	496	488	475	470	458	461	471	501	508	529	551	554
0																	
15	527	515	504	497	484	471	460	452	446	433	437	449	476	485	503	526	527
1																	
15	502	492	478	472	457	445	436	427	418	410	414	424	452	462	477	501	502
2																	
15	475	467	452	443	431	422	407	399	394	388	388	399	427	437	449	474	475
3																	
15	447	442	427	418	407	395	382	375	371	362	364	376	400	414	424	444	447
4																	
15	419	414	400	391	381	370	358	350	343	336	341	351	374	386	398	417	419
5																	
15	393	391	375	364	354	343	334	326	318	313	316	324	349	363	372	392	393
6																	
15	366	362	349	341	328	317	309	298	294	289	291	301	325	336	345	366	366
7																	
15	339	337	322	314	303	290	282	275	270	264	268	279	299	313	321	338	339
8																	
15	315	309	297	290	277	267	259	251	246	243	245	254	276	286	295	313	315
9																	
16	290	283	273	266	253	245	237	227	223	221	222	232	252	262	271	288	290
0																	
16	265	257	247	241	229	221	212	205	200	197	200	210	231	240	248	266	265
1																	
16	240	232	222	219	206	197	190	184	179	176	179	188	207	217	227	240	240
2																	
16	215	208	198	195	184	175	168	162	157	156	159	166	185	195	204	216	215
3																	

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164	193	185	174	172	162	155	147	140	137	138	137	147	163	170	184	191	193
165	169	161	154	150	141	132	127	121	119	116	119	127	142	149	163	169	169
166	149	141	133	131	122	113	109	105	100	100	103	110	123	131	141	146	149
167	127	122	115	114	103	97	92	87	83	85	86	92	105	112	123	127	127
168	109	101	97	94	86	81	77	70	69	69	70	76	88	94	105	108	109
169	91	86	80	77	71	64	61	58	56	56	58	63	73	78	87	92	91
170	74	70	66	64	57	52	48	46	43	44	45	50	59	63	71	75	74
171	59	56	51	49	44	40	37	35	33	35	35	38	46	51	57	60	59
172	47	44	41	39	34	30	29	27	26	26	26	29	37	39	45	47	47
173	37	34	31	29	26	22	21	20	19	19	20	22	28	30	34	36	37
174	27	26	23	21	19	17	16	15	14	14	15	17	20	22	26	27	27
175	20	19	17	17	14	12	12	11	11	11	11	12	15	17	19	20	20
176	14	14	12	12	10	10	9	9	8	9	9	9	11	12	14	14	14
177	11	10	10	9	8	7	7	8	7	7	7	8	8	9	10	10	11
178	8	8	8	7	6	5	6	6	6	6	6	6	6	7	7	8	8
179	6	7	6	6	5	5	5	6	6	6	5	6	5	6	5	6	6
180	6	6	6	6	4	5	5	5	5	6	6	6	5	5	5	5	6

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**2.2 Electrical, Photometric and Chromaticity Measurements***(Refer to Work Instruction BL-QP-033)*

<b>Test date</b>	2020-09-11	<b>Test Ambient:</b>	25.2 ° C
<b>Test Orientation</b>	As intended	<b>Stabilization Time (min)</b>	90
<b>Model Number</b>	LED80HIDRSC2MOG(5000K)		

**Electrical Measurement:**

Sample No.	Voltage (Vac)	Frequency (Hz)	Current (A)	Power (W)	Power Factor	THD %
BLC200900	120.1	60	0.691	82.39	0.993	7.61
7E-G3	277.1	60	0.338	84.92	0.908	15.54
<b>DLC Pass Criteria</b>					$\geq 0.9(-3\%)$	$\leq 20(+5)$

**Chromaticity Measurement - Sphere-Spectroradiometer Method:**

Parameter	Result	Special Color Rendering Indices			
Test Voltage (V)	120.0	R1	81	R9	7
Frequency (Hz)	60	R2	89	R10	74
CCT (K)	4988	R3	94	R11	80
Duv	0.0026	R4	81	R12	55
Chromaticity (x, y)	x=0.3460 y=0.3574	R5	81	R13	84
Chromaticity (u', v')	u(u')=0.2098' =0.4876	R6	84	R14	97
Color Rendering Index (CRI)	83	R7	87	R15	75
R9	7	R8	66	--	--
Rf	84				
Rg	95				
Rcs,h1(%)	-13				

**Photometric Measurement – Sphere-Spectroradiometer Method:**

Parameter	Result	
Test Voltage (V)	120.0	277.0
Frequency (Hz)	60	60
Total Luminous (lm)	12451.9	12810.8
Luminous Efficacy (lm/W)	151.13	150.86
Most worst Luminous/Highest Watts	146.63	

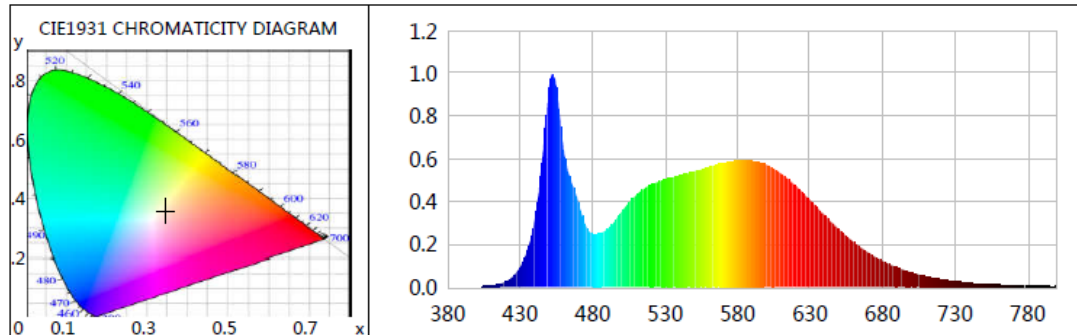




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## Spectral Power Distribution & Chromaticity Diagram



WL(nm)	PL	PE(mW/nm)	WL(nm)	PL	PE(mW/nm)	WL(nm)	PL	PE(mW/nm)
380	0.0002	0.0647	525	0.4923	165.4828	670	0.1616	54.3158
385	0.0005	0.1586	530	0.5024	168.8617	675	0.1408	47.3434
390	0.0002	0.0733	535	0.5102	171.5005	680	0.1222	41.0868
395	0.0009	0.2873	540	0.5226	175.6664	685	0.1057	35.5424
400	0.0009	0.3138	545	0.5295	177.9955	690	0.0920	30.9302
405	0.0026	0.8797	550	0.5404	181.6563	695	0.0787	26.4402
410	0.0050	1.6883	555	0.5503	184.9586	700	0.0679	22.8074
415	0.0116	3.8838	560	0.5613	188.6647	705	0.0583	19.5926
420	0.0249	8.3831	565	0.5715	192.0981	710	0.0495	16.6427
425	0.0489	16.4300	570	0.5797	194.8656	715	0.0425	14.2695
430	0.0939	31.5494	575	0.5878	197.5644	720	0.0362	12.1522
435	0.1729	58.1175	580	0.5923	199.0829	725	0.0314	10.5673
440	0.3096	104.0500	585	0.5914	198.7741	730	0.0266	8.9380
445	0.5821	195.6506	590	0.5913	198.7584	735	0.0227	7.6467
450	0.9380	315.2858	595	0.5835	196.1413	740	0.0200	6.7087
455	0.9371	314.9907	600	0.5715	192.0878	745	0.0173	5.8289
460	0.6457	217.0341	605	0.5532	185.9361	750	0.0141	4.7484
465	0.5003	168.1612	610	0.5311	178.5264	755	0.0128	4.2938
470	0.3956	132.9730	615	0.5046	169.5998	760	0.0115	3.8668
475	0.2902	97.5386	620	0.4740	159.3190	765	0.0088	2.9466
480	0.2484	83.5002	625	0.4400	147.8977	770	0.0078	2.6173
485	0.2511	84.4134	630	0.4070	136.7983	775	0.0069	2.3138
490	0.2685	90.2554	635	0.3714	124.8364	780	0.0053	1.7902
495	0.3049	102.5017	640	0.3365	113.1126	785	0.0044	1.4937
500	0.3517	118.2022	645	0.3016	101.3672	790	0.0045	1.5261
505	0.3934	132.2336	650	0.2697	90.6629	795	0.0039	1.3185
510	0.4307	144.7808	655	0.2383	80.0940	800	0.0027	0.9155
515	0.4567	153.4992	660	0.2105	70.7496			
520	0.4761	160.0271	665	0.1842	61.9104			

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## TM30

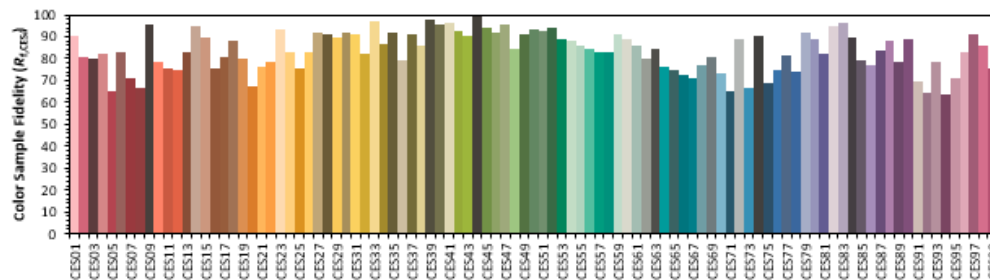
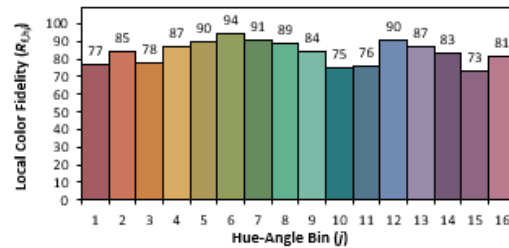
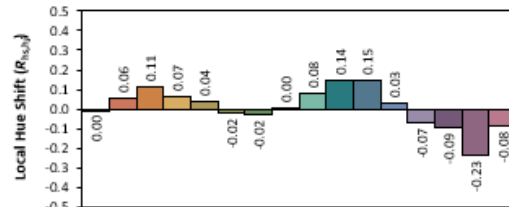
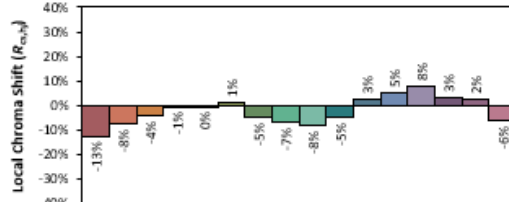
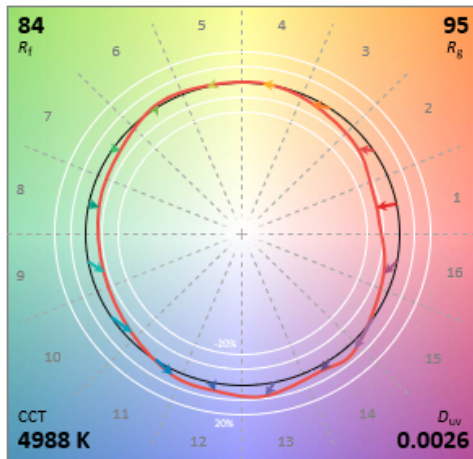
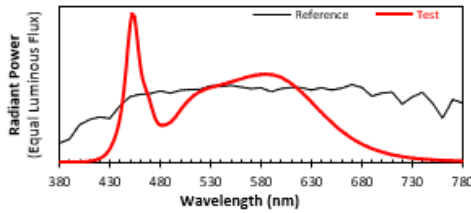
### ANSI/IES TM-30-18 Color Rendition Report

Source: L128-5080RA35000H1

Date: 2020/9/11

Manufacturer: ASMAIT LIGHT CO., LTD

Model: LED80HIDRSC2M0G(5000K)



Notes: This is a recommended method for displaying ANSI/IES TM-30-18 information.

$x$  0.3460  
 $y$  0.3574  
 $u'$  0.2098  
 $v'$  0.4876

CIE 13.3-1995  
(CRI)

$R_a$  83  
 $R_g$  7

Colors are for visual orientation purposes only. Created with the ANSI/IES TM-30-18 Calculator Version 2.00.



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## Zonal Lumen Tabulation

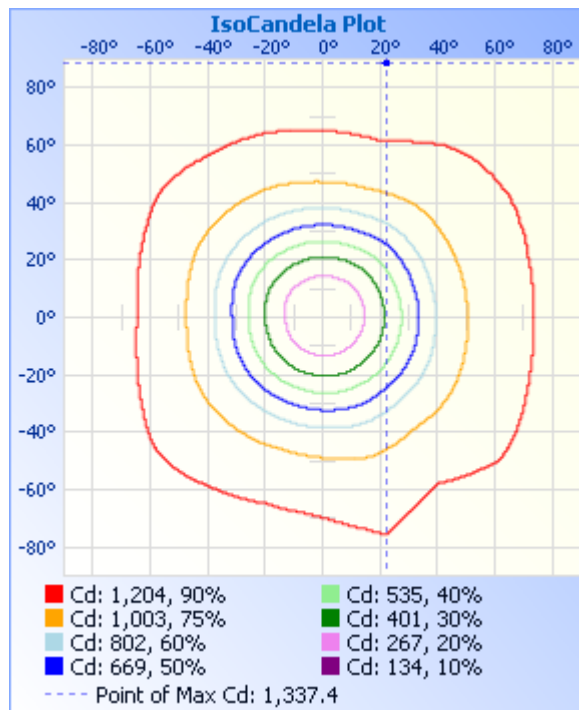
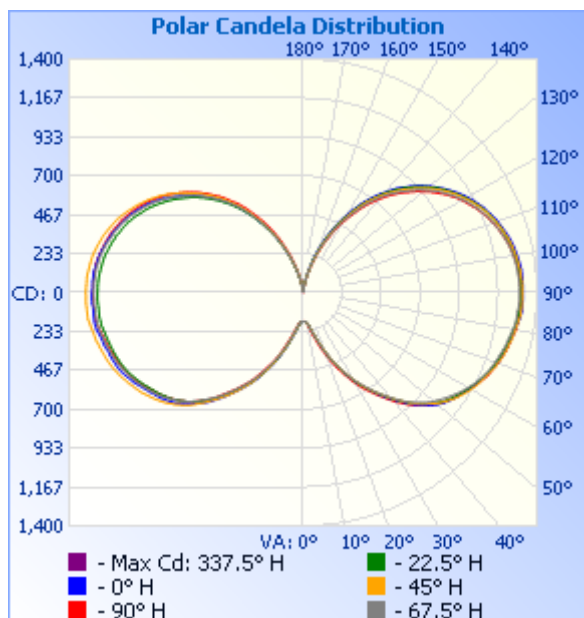
Zonal Lumen Summary				Lumens Per Zone					
Zone	Lumens	% Lamp	% Luminaire	Zone	Lumens	% Total	Zone	Lumens	% Total
0-30	336.3	2.7%	2.7%	0-10	18.0	0.1%	90-100	1,398.0	11.2%
0-40	794.1	6.4%	6.4%	10-20	84.5	0.7%	100-110	1,312.3	10.5%
0-60	2,495.9	20%	20%	20-30	233.8	1.9%	110-120	1,148.5	9.2%
60-90	3,890.7	31.2%	31.2%	30-40	457.9	3.7%	120-130	921.9	7.4%
70-100	4,115.1	33%	33%	40-50	728.2	5.8%	130-140	660.2	5.3%
90-120	3,858.8	31%	31%	50-60	973.5	7.8%	140-150	398.9	3.2%
0-90	6,386.6	51.3%	51.3%	60-70	1,173.6	9.4%	150-160	179.0	1.4%
90-180	6,066.2	48.7%	48.7%	70-80	1,317.4	10.6%	160-170	44.6	0.4%
0-180	12,452.8	100%	100%	80-90	1,399.6	11.2%	170-180	2.8	0%



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## Photometric Data





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**Candela Table - Type C**

	112.				157.				202.				247.				292.				337.			
	0	22.5	45	67.5	90	5	135	5	180	5	225	5	270	5	315	5	360							
0	172	172	172	172	172	172	172	172	172	172	172	172	172	172	172	172	172							
1	172	172	172	172	171	171	172	172	172	172	172	171	172	173	172	172	172							
2	173	172	172	172	171	173	173	173	172	172	172	172	172	174	172	174	173							
3	174	173	173	173	173	173	174	174	175	174	172	173	174	175	173	174	174							
4	176	174	174	174	174	176	177	178	177	178	175	175	175	176	175	176	176							
5	177	176	176	175	178	179	181	181	181	182	179	177	177	177	176	177	177							
6	179	178	178	179	183	183	185	187	185	186	184	182	179	180	179	180	179							
7	182	182	181	183	188	190	191	194	193	193	190	188	185	184	182	183	182							
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9	194	193	195	196	207	208	211	212	211	211	208	203	199	198	193	193	194							
10	201	203	203	205	217	220	222	226	224	222	218	213	207	205	202	201	201							
11	211	212	213	217	231	234	234	238	240	237	232	227	219	216	210	211	211							
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13	237	238	238	242	260	263	264	270	266	264	261	256	243	242	234	238	237							
14	251	253	253	258	278	281	281	287	285	280	277	273	260	255	248	251	251							
15	268	269	269	274	294	298	300	303	303	299	296	288	279	270	267	267	268							
16	287	287	288	289	311	318	318	320	322	320	315	305	295	289	283	286	287							
17	304	306	307	308	333	337	337	342	340	337	332	325	311	308	303	306	304							
18	325	325	324	331	354	354	357	364	360	355	354	345	331	330	321	326	325							
19	348	348	345	353	374	374	381	384	381	374	374	363	351	350	341	348	348							
20	370	372	367	375	395	399	401	404	406	397	394	385	374	370	363	369	370							
21	393	395	392	395	418	423	423	428	428	421	416	405	400	391	385	390	393							
22	416	419	415	415	440	446	445	452	449	443	438	427	423	416	405	415	416							
23	440	440	437	438	465	469	468	475	470	464	463	449	444	438	430	439	440							
24	465	461	460	459	487	489	490	498	491	485	487	475	464	462	452	464	465							
25	487	484	483	482	508	511	516	518	512	509	508	496	483	485	475	487	487							
26	512	508	507	505	531	533	541	540	537	530	530	517	507	508	499	511	512							
27	535	533	530	527	557	557	563	566	560	553	553	538	530	532	522	536	535							
28	559	559	553	554	578	580	586	589	583	575	576	562	554	554	544	561	559							
29	583	582	579	577	604	603	611	614	606	598	603	585	578	577	567	586	583							

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30	611	608	601	602	627	626	632	638	628	622	625	607	603	601	591	609	611
31	631	632	625	624	651	650	655	659	647	641	647	628	624	623	612	631	631
32	652	656	648	645	675	670	676	680	670	659	668	649	644	645	635	656	652
33	676	674	674	667	696	689	697	704	691	681	692	672	665	665	659	678	676
34	698	696	694	691	717	712	719	724	712	700	712	692	686	690	682	702	698
35	722	719	717	712	737	733	742	745	734	722	735	714	709	710	701	723	722
36	745	740	739	735	759	758	766	767	757	745	757	733	729	732	726	749	745
37	770	762	760	756	781	779	788	789	780	767	777	755	752	754	748	769	770
38	792	784	784	778	804	801	809	814	802	787	799	778	775	778	771	793	792
39	813	810	804	800	827	824	836	839	825	810	822	801	798	800	793	818	813
40	836	830	827	824	852	845	863	864	848	830	842	821	823	823	817	841	836
41	859	852	851	847	871	867	881	883	870	851	864	841	845	848	840	865	859
42	880	875	870	869	893	886	901	906	886	872	888	860	866	867	866	888	880
43	905	896	894	892	915	907	920	928	909	887	907	882	884	891	889	911	905
44	928	918	918	913	935	925	942	947	926	906	931	902	903	912	908	936	928
45	949	939	940	933	954	944	961	966	943	925	951	921	922	931	930	956	949
46	969	959	960	947	971	961	979	985	963	941	969	939	941	950	951	977	969
47	990	976	979	967	990	980	995	1000	981	956	987	956	956	967	968	997	990
48	1008	996	996	985	1007	997	1012	1015	996	971	1004	971	971	985	985	1017	1008
49	1026	1012	1016	1001	1023	1013	1027	1029	1009	985	1022	987	985	998	1002	1036	1026
50	1045	1029	1034	1016	1038	1029	1040	1041	1022	999	1034	1001	1000	1011	1016	1053	1045
51	1059	1047	1051	1028	1051	1042	1050	1052	1033	1011	1051	1014	1010	1024	1030	1068	1059
52	1072	1060	1067	1042	1064	1051	1062	1063	1045	1023	1064	1029	1023	1035	1042	1080	1072
53	1084	1075	1080	1056	1078	1060	1074	1076	1055	1033	1076	1042	1035	1045	1056	1094	1084
54	1094	1085	1093	1068	1089	1070	1086	1086	1065	1044	1090	1054	1046	1056	1067	1107	1094
55	1104	1095	1107	1081	1100	1081	1097	1097	1076	1054	1100	1066	1055	1064	1079	1118	1104

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56	111 5	110 6	111 8	109 3	111 1	1089	110 7	1107	108 3	1063	111 1	1076	106 5	1073	108 9	1128	111 5
57	112 4	111 7	112 9	110 6	112 1	1098	111 8	1119	109 5	1072	112 2	1086	107 5	1083	109 8	1140	112 4
58	113 3	112 8	114 0	111 8	113 1	1107	112 9	1128	110 3	1082	113 5	1096	108 5	1092	111 0	1151	113 3
59	114 3	113 7	115 1	112 8	114 2	1118	113 9	1137	111 3	1091	114 5	1106	109 7	1103	111 8	1160	114 3
60	115 1	114 8	116 0	113 9	115 2	1128	114 9	1149	112 3	1102	115 3	1116	110 8	1114	112 8	1169	115 1
61	116 1	115 7	116 9	115 0	116 4	1137	115 8	1158	113 5	1111	116 2	1125	111 7	1125	114 0	1177	116 1
62	117 0	116 5	117 8	116 1	117 4	1147	116 9	1169	114 6	1120	117 2	1134	112 8	1134	114 8	1187	117 0
63	117 9	117 5	118 7	117 0	118 4	1157	117 6	1177	115 6	1130	118 2	1142	113 7	1144	115 9	1196	117 9
64	118 8	118 3	119 3	117 9	119 4	1166	118 5	1188	116 4	1137	119 0	1151	114 7	1153	116 8	1207	118 8
65	119 8	119 3	120 3	118 9	120 4	1176	119 4	1195	117 4	1146	119 9	1160	115 4	1162	117 7	1218	119 8
66	120 6	120 1	120 9	119 6	121 3	1185	120 2	1204	118 3	1153	120 8	1167	116 1	1171	118 7	1223	120 6
67	121 4	121 0	121 8	120 4	122 0	1193	120 9	1212	119 0	1160	121 5	1174	116 9	1180	119 6	1231	121 4
68	122 2	121 7	122 5	121 0	122 6	1200	121 4	1220	119 7	1167	122 2	1181	117 4	1186	120 2	1239	122 2
69	123 0	122 4	123 4	121 7	123 3	1206	122 1	1227	120 3	1173	123 1	1189	118 1	1193	120 8	1246	123 0
70	123 8	122 9	124 0	122 2	124 0	1214	122 8	1233	120 6	1177	123 6	1194	118 6	1200	121 2	1254	123 8
71	124 4	123 7	124 7	122 8	124 5	1219	123 3	1239	121 2	1182	124 2	1199	119 2	1205	121 7	1258	124 4
72	124 9	124 0	125 3	123 3	125 2	1223	124 1	1245	121 6	1187	124 6	1205	119 6	1207	122 2	1264	124 9
73	125 5	124 6	125 9	123 9	125 7	1230	124 5	1250	121 8	1190	125 1	1208	120 2	1210	122 7	1271	125 5

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74	125 9	125 1	126 2	124 5	126 3	1234	125 0	1253	122 4	1194	125 6	1214	120 7	1218	123 1	1275	125 9
75	126 5	125 7	126 9	125 1	126 9	1238	125 5	1260	123 2	1198	126 1	1220	121 2	1221	124 0	1282	126 5
76	127 0	126 3	127 1	125 6	127 2	1243	126 0	1263	123 5	1201	126 6	1224	121 8	1226	124 4	1287	127 0
77	127 3	126 7	127 8	125 9	127 3	1246	126 6	1266	123 7	1206	127 3	1227	122 3	1231	125 0	1294	127 3
78	128 0	126 9	128 3	126 4	128 2	1253	127 1	1275	124 3	1209	127 5	1233	122 8	1236	125 6	1298	128 0
79	128 4	127 4	128 6	127 0	128 6	1259	127 6	1282	125 0	1214	127 8	1237	123 4	1241	126 1	1304	128 4
80	128 8	127 8	129 0	127 5	129 3	1264	128 0	1285	125 6	1219	128 3	1241	124 1	1247	126 8	1310	128 8
81	129 3	128 5	129 4	128 1	129 4	1268	128 3	1287	126 1	1225	128 8	1246	124 6	1254	127 2	1316	129 3
82	130 0	128 9	129 9	128 5	129 8	1273	128 4	1291	126 2	1225	129 2	1246	125 0	1257	127 7	1321	130 0
83	130 5	129 4	130 4	128 6	129 9	1273	128 7	1292	126 2	1228	129 9	1249	125 3	1259	128 3	1324	130 5
84	131 1	129 6	130 9	128 7	129 9	1274	128 8	1291	126 2	1229	129 8	1251	125 1	1260	128 5	1328	131 1
85	131 5	129 9	131 0	128 8	130 1	1275	128 7	1289	126 2	1229	129 9	1251	125 3	1259	128 9	1332	131 5
86	131 3	130 2	131 2	129 2	130 4	1280	129 0	1293	126 2	1229	130 0	1252	125 7	1260	129 1	1334	131 3
87	131 5	130 3	131 2	129 5	130 4	1275	129 0	1295	126 5	1231	130 1	1254	125 8	1264	129 2	1336	131 5
88	131 7	130 6	131 2	129 7	130 3	1275	129 0	1293	126 6	1232	130 2	1253	125 6	1262	128 9	1336	131 7
89	131 7	130 4	131 2	129 6	130 4	1277	129 0	1293	126 6	1231	130 0	1253	125 9	1264	129 1	1337	131 7
90	131 6	130 6	131 2	129 6	130 3	1278	128 9	1295	126 4	1231	130 2	1254	126 0	1264	129 2	1336	131 6
91	131 5	130 7	131 2	129 6	130 4	1278	129 0	1293	126 3	1230	130 1	1253	125 8	1264	129 0	1335	131 5

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92	131 7	130 7	131 2	129 5	130 2	1276	128 8	1291	126 2	1230	129 9	1252	125 9	1264	129 0	1335	131 7
93	131 5	130 6	131 1	129 4	130 2	1275	128 6	1290	126 3	1229	129 9	1253	125 8	1264	129 0	1335	131 5
94	131 6	130 3	131 0	129 3	129 8	1274	128 6	1290	126 2	1228	129 9	1251	125 7	1262	128 8	1334	131 6
95	131 5	130 3	130 8	129 1	129 6	1272	128 4	1288	126 0	1225	129 6	1249	125 6	1260	128 7	1333	131 5
96	131 4	130 1	130 6	129 0	129 6	1269	128 3	1285	125 9	1222	129 3	1248	125 4	1258	128 7	1332	131 4
97	131 2	129 9	130 3	128 7	129 2	1266	127 9	1282	125 3	1220	128 9	1246	125 3	1256	128 5	1330	131 2
98	130 8	129 7	130 0	128 5	129 0	1263	127 5	1278	125 0	1216	128 7	1242	125 2	1252	128 3	1327	130 8
99	130 4	129 5	129 8	128 1	128 5	1261	127 1	1274	124 6	1213	128 3	1239	124 9	1250	127 9	1324	130 4
100	130 1	129 1	129 3	127 8	128 1	1256	126 8	1271	124 3	1210	128 0	1236	124 4	1246	127 6	1320	130 1
101	129 7	128 6	128 9	127 3	127 6	1252	126 1	1266	123 7	1207	127 5	1231	123 9	1240	127 2	1318	129 7
102	129 4	128 3	128 5	127 0	127 1	1246	125 8	1261	123 2	1198	126 9	1225	123 4	1237	126 9	1313	129 4
103	128 9	127 8	128 1	126 4	126 7	1240	125 3	1254	122 5	1193	126 3	1220	122 9	1233	126 4	1310	128 9
104	128 4	127 2	127 6	125 8	126 1	1235	124 6	1247	122 0	1187	125 6	1214	122 4	1227	125 9	1304	128 4
105	127 8	126 7	127 0	125 2	125 3	1229	123 9	1241	121 3	1182	125 1	1207	121 7	1222	125 3	1297	127 8
106	127 1	125 9	126 1	124 5	124 5	1221	123 1	1234	120 6	1175	124 5	1198	121 1	1214	124 6	1289	127 1
107	126 4	125 3	125 5	123 8	123 7	1215	122 4	1227	119 9	1170	123 5	1192	120 6	1207	123 9	1283	126 4
108	125 6	124 9	124 9	123 1	123 1	1208	121 7	1218	119 2	1160	122 7	1187	120 0	1201	123 3	1276	125 6
109	124 9	124 1	124 1	122 2	122 2	1201	121 0	1210	118 2	1153	122 0	1179	119 2	1194	122 5	1268	124 9

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11	124	123	123	121	121	1192	120	1201	117	1145	121	1169	118	1186	121	1261	124
0	2	3	4	5	5		2		4		0		3		9		2
11	123	122	122	120	120	1187	119	1190	116	1137	120	1161	117	1178	121	1253	123
1	6	5	6	6	5		3		7		1		5		0		6
11	122	121	121	119	119	1177	118	1181	115	1131	119	1153	116	1170	120	1244	122
2	5	8	5	8	5		4		7		3		8		2		5
11	121	120	120	118	118	1167	117	1172	114	1118	118	1142	115	1160	119	1235	121
3	7	9	7	8	6		3		8		1		9		3		7
11	120	120	119	117	117	1158	116	1163	113	1109	117	1134	114	1152	118	1227	120
4	6	0	9	9	5		3		8		0		9		5		6
11	119	119	118	116	116	1146	115	1149	112	1099	116	1120	113	1141	117	1217	119
5	9	0	8	9	5		3		9		0		9		4		9
11	118	117	117	115	115	1135	114	1139	111	1085	114	1109	112	1131	116	1205	118
6	7	8	7	7	4		1		8		5		9		3		7
11	117	116	116	114	114	1124	112	1126	110	1074	113	1097	111	1119	115	1193	117
7	5	8	4	5	0		8		5		5		7		2		5
11	116	115	115	113	112	1111	111	1114	109	1064	112	1086	110	1107	114	1181	116
8	5	6	4	4	8		5		4		2		7		1		5
11	115	114	114	112	111	1099	110	1100	108	1052	110	1073	109	1094	113	1170	115
9	4	3	2	3	6		1		1		9		5		0		4
12	114	113	112	111	110	1085	109	1088	107	1039	109	1061	108	1084	111	1156	114
0	1	2	7	0	6		0		0		5		3		8		1
12	112	111	111	109	109	1070	107	1075	105	1025	108	1050	107	1070	110	1143	112
1	9	9	4	7	2		4		4		2		0		3		9
12	111	110	110	108	107	1057	106	1061	103	1011	106	1035	105	1058	109	1131	111
2	4	6	2	4	8		0		9		7		6		2		4
12	110	109	108	107	106	1044	104	1047	102	997	105	1020	104	1043	107	1116	110
3	2	3	7	0	2		5		5		1		2		7		2
12	108	107	107	105	104	1028	103	1030	101	983	103	1005	102	1030	106	1102	108
4	7	7	3	5	8		1		1		7		8		3		7
12	107	106	105	104	103	1013	101	1017	992	969	102	992	101	1015	104	1086	107
5	1	5	8	0	2		5				1		5		9		1
12	105	105	104	102	101	998	100	998	976	954	100	974	100	1001	103	1073	105
6	7	0	2	5	3		1				5		0		4		7
12	104	103	102	101		997	984	981	979	959	937	986	958	984	985	101	104
7	1	6	7	2												9	1

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12	102	102	101	995	980	964	965	963	943	921	967	941	969	970	100	1038	102
8	5	0	0												3		5
12	100	100	993	976	964	949	948	947	924	905	952	923	952	954	987	1022	100
9	9	3															9
13	993	987	975	958	944	934	928	928	906	889	932	906	935	938	970	1003	993
0																	
13	975	969	957	942	926	915	910	908	888	875	912	888	918	921	951	986	975
1																	
13	959	952	937	922	908	894	891	890	873	855	893	870	900	903	934	969	959
2																	
13	940	933	920	903	888	878	869	873	851	837	873	854	882	886	917	949	940
3																	
13	921	915	898	883	866	862	851	851	832	819	856	832	866	866	896	930	921
4																	
13	902	893	880	862	851	838	832	831	813	798	834	812	845	849	875	910	902
5																	
13	880	875	861	843	830	819	810	809	790	778	815	792	826	829	857	886	880
6																	
13	864	853	840	824	808	798	791	789	771	759	794	772	805	809	835	872	864
7																	
13	843	832	818	803	788	778	770	768	751	740	771	753	784	789	816	848	843
8																	
13	820	810	798	784	768	756	748	747	730	718	750	732	766	769	792	827	820
9																	
14	798	787	779	762	744	734	727	725	706	699	729	712	744	748	773	804	798
0																	
14	773	766	756	738	722	712	703	702	684	677	704	689	724	726	752	781	773
1																	
14	754	740	733	715	698	688	679	680	663	655	680	667	698	704	729	758	754
2																	
14	730	715	710	692	676	665	658	657	638	634	658	646	677	680	706	732	730
3																	
14	708	693	687	669	654	643	634	633	615	611	635	623	657	659	682	709	708
4																	
14	684	670	664	643	626	619	608	607	591	589	609	597	632	634	661	684	684
5																	

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14	658	647	638	616	603	594	583	581	568	563	585	573	610	614	637	657	658
6																	
14	634	620	611	588	575	571	557	556	542	538	560	547	584	589	614	630	634
7																	
14	606	594	584	563	549	546	530	529	516	514	533	522	555	564	591	605	606
8																	
14	582	567	558	537	525	520	507	505	491	487	508	499	533	539	567	580	582
9																	
15	554	539	534	515	501	495	482	479	467	463	483	476	509	511	541	553	554
0																	
15	527	514	506	489	475	469	457	456	440	439	458	452	485	485	514	528	527
1																	
15	503	489	481	463	449	446	429	430	417	418	432	425	461	461	483	501	503
2																	
15	476	464	453	438	425	420	404	404	395	392	407	402	436	438	456	475	476
3																	
15	450	438	426	413	398	396	379	380	369	368	382	375	411	413	429	449	450
4																	
15	423	411	400	386	374	370	354	352	344	343	356	352	385	389	403	419	423
5																	
15	397	383	372	359	347	344	327	326	318	320	329	328	357	365	377	394	397
6																	
15	368	357	346	335	322	316	304	302	293	293	303	304	331	339	350	365	368
7																	
15	342	329	318	312	297	290	280	276	268	270	282	278	306	315	322	341	342
8																	
15	315	302	292	286	273	268	254	253	246	248	255	255	281	291	298	315	315
9																	
16	288	277	267	263	250	244	231	232	224	224	233	233	259	267	275	291	288
0																	
16	265	251	242	238	226	219	210	209	200	201	211	212	235	243	251	269	265
1																	
16	242	228	216	212	202	198	188	184	179	181	188	189	213	221	227	242	242
2																	
16	217	204	193	190	180	178	164	163	158	160	164	168	190	196	205	216	217
3																	

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16 4	193	182	173	169	159	154	145	142	137	139	144	148	166	173	182	193	193
16 5	169	158	152	150	139	132	127	122	117	120	126	127	144	153	162	169	169
16 6	146	137	133	128	120	113	109	105	102	103	106	110	126	133	141	148	146
16 7	128	118	112	109	103	97	91	89	85	88	90	93	109	115	121	126	128
16 8	110	100	94	92	85	80	75	72	69	70	74	78	89	95	105	108	110
16 9	89	82	80	76	69	64	61	60	56	58	60	63	74	81	88	91	89
17 0	74	69	65	63	57	52	49	45	44	46	48	51	61	66	72	74	74
17 1	60	54	50	50	43	39	38	36	35	36	37	40	49	51	58	60	60
17 2	46	43	40	38	33	30	29	28	26	27	29	30	38	40	45	46	46
17 3	36	33	31	30	25	23	21	20	20	20	22	23	28	31	35	37	36
17 4	28	24	23	21	19	17	16	14	15	15	16	17	21	24	26	27	28
17 5	21	18	17	16	14	12	12	11	11	11	12	13	15	18	19	20	21
17 6	14	14	13	12	10	9	9	9	9	9	9	10	11	13	14	15	14
17 7	11	10	10	10	7	7	7	7	7	7	8	8	9	9	10	11	11
17 8	8	8	8	8	6	6	6	7	6	7	6	7	6	7	8	8	8
17 9	7	7	7	7	5	5	6	5	6	6	6	6	5	6	6	6	7
18 0	6	6	6	6	4	5	6	6	5	6	6	6	5	6	6	5	6

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### 3. Test Equipment

Equipment Name	Model No.	Serial No.	Next Calibration Date
Goniophotometric System	GPM-3000	DYHXF120001	2021/2/26
AC Power Source	CHP-500C	N/A	2021/3/29
Total Luminous Flux Standard Lamp	24V/150W	DYJYR040040	2021/3/1
Digital Power Meter	WT500	DYDWQ200006	2021/3/29
Integral Sphere (2M)	2M	DYJCE120067	2021/2/26
Digital Power Meter	WT500	DYDWQ200006	2021/3/29
Optical Color and Electrical Measurement System	CMS-3000S	DYJCE120067	2021/2/26
Expand Uncertainty: Photometric Measurement (Sphere): 2.08%, k=2 Chromaticity Measurement(Sphere):25.6K, k=2 Photometric Measurement(Goniophotometer):2.645%, k=2			

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