



Report No.: BLC2010026E-C

LM-79-08 Test Report

For

LEDVANCE LLC

(Brand Name: SYLVANIA)

200 Ballardvale St. Wilmington, MA 01887 USA

LED Area Lamp

Model name(s):

LED45HIDRODAREA830MOG

LED45HIDRODAREA840MOG

LED45HIDRODAREA850MOG

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

Test & Report By:

Lily Yang

Engineer: Lily Yang

Date: 2020-11-06

Review By:

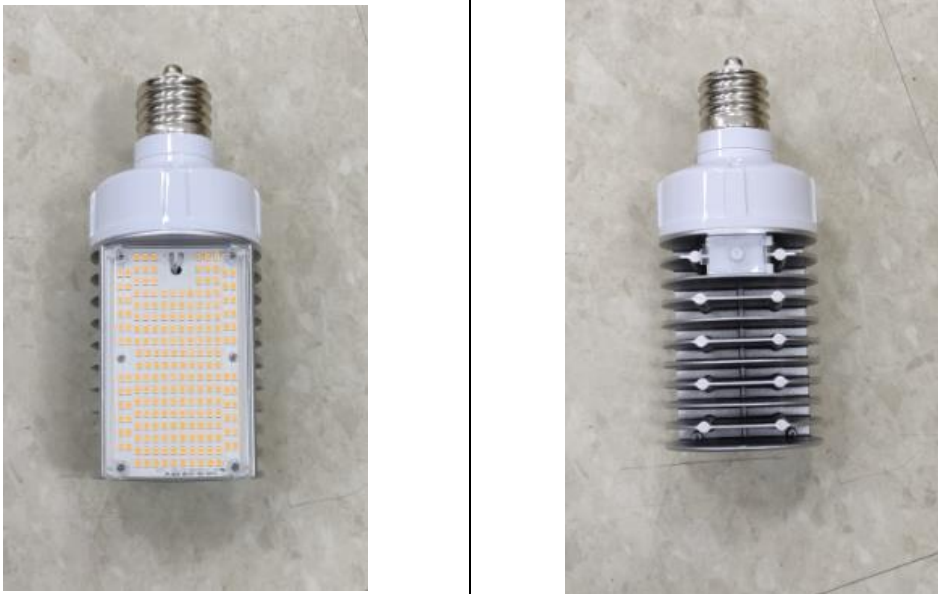
Jason Luo

Manager: Jason Luo



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1.1 Product Information:

Organization Name	LEDVANCE LLC	
Brand Name	SYLVANIA	
Model Number	LED45HIDRODAREA830MOG LED45HIDRODAREA840MOG LED45HIDRODAREA850MOG	
SKU (if available)	N/A	
Type of Product (for integral lamps, list base type and lamp type)	LED Area Lamp	
Rated Voltage / Frequency	120-277Vac, 50/60 Hz	
Nominal Power	45W	
Rated Stabilized Lamp Lumen	6300 lm (3000K), 6750 lm (4000K/5000K)	
Declared CCT	3000K, 4000K, 5000K	
LED Manufacturer	Lumileds Holding B.V.	
LED Model	L128-XX80RA35000H1	
Sample Number	BLC2010026E-C1(3000K), C2(4000K), C3(5000K)	
Luminaire Aperture (for downlights)	--	in.
Luminaire Length	--	mm
Luminaires Width	--	mm
Number of Units (modular products)	N/A	s
Photo		
		



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1.2 Test Specifications:

Date of Receipt	2020-11-02
Date of Test	2020-11-04
Test item	<ol style="list-style-type: none">1. Total Luminous Flux2. Luminous Distribution Intensity3. Luminous Efficacy4. Correlated Color Temperature5. Color Rendering Index6. Chromaticity Coordinate7. Electrical Parameters
Reference Standard	<ol style="list-style-type: none">1. IES LM-79-2008 Electrical and Photometric Measurements of Solid-State Lighting Products2. ANSI C78.377-2008 Specifications for the Chromaticity of Solid State Lighting Products3. CIE 13.3-1995 Method of Measuring and Specifying Colour Rendering Properties of Light Sources4. CIE 15-2004 Technical Report Colorimetry5. IESNA LM-16-93 Practical Guide to Colorimetry of Light Source6. IESNA TM-16-05 Technical Memorandum on Light Emitting Diode (LED) Sources and Systems
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° vertical intervals and 22.5° 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)

Test date	2020-11-04	Test Ambient:	25.6 °C
Test Orientation	As intended	Stabilization Time (min)	90
Model Number	LED45HIDRODAREA830MOG		

Electrical Measurement:

Sample No.	Voltage (Vac)	Frequency (Hz)	Current (A)	Power (W)	Power Factor	THD %
BLC201002	120.0	60	0.373	44.08	0.986	14.01
6E-C1	277.0	60	0.173	44.22	0.922	15.36
DLC Pass Criteria					$\geq 0.9(-3\%)$	$\leq 20(+5)$

Chromaticity Measurement - Sphere-Spectroradiometer Method:

Parameter	Result	Special Color Rendering Indices			
Test Voltage (V)	120.0	R1	81	R9	4
Frequency (Hz)	60	R2	92	R10	82
CCT (K)	2941	R3	94	R11	80
Duv	-0.0014	R4	80	R12	73
Chromaticity (x, y)	x=0.4391 y=0.4013	R5	82	R13	84
Chromaticity (u', v')	u(u')=0.2532 v'=0.5206	R6	91	R14	98
Color Rendering Index (CRI)	82	R7	80	R15	73
R9	4	R8	56	--	--
Rf	84				
Rg	95				
Rcs,h1(%)	-12				

Photometric Measurement – Goniophotometer Method:

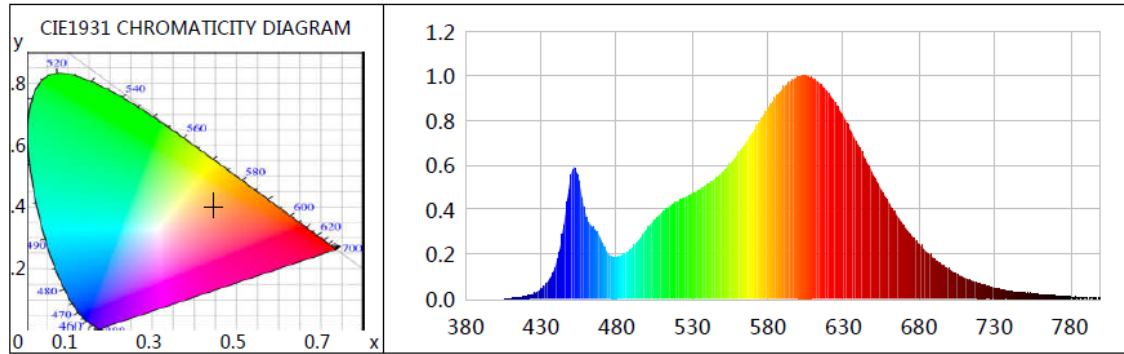
Parameter	Result		Rating	Tolerance
Test Voltage (V)	120.0	277.0	--	--
Frequency (Hz)	60	60	--	--
Total Luminous (lm)	6367.0	6415.6	6300	Comply -10%
Luminous Efficacy (lm/W)	144.44	145.08	140	Comply -3%
Most worst Luminous/Highest	143.98		--	--
Beam Angle (°)	--	--	--	--
Center Beam Candle Power (cd)	2265	--	--	--



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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	0.0001	0.0164	525	0.4558	61.1556	670	0.3280	44.0052
385	0.0005	0.0644	530	0.4722	63.3568	675	0.2850	38.2307
390	0.0002	0.0246	535	0.4908	65.8468	680	0.2450	32.8646
395	0.0003	0.0364	540	0.5136	68.9124	685	0.2097	28.1375
400	0.0008	0.1121	545	0.5372	72.0674	690	0.1807	24.2382
405	0.0011	0.1460	550	0.5686	76.2839	695	0.1540	20.6554
410	0.0022	0.2927	555	0.6051	81.1775	700	0.1310	17.5747
415	0.0050	0.6749	560	0.6487	87.0367	705	0.1117	14.9865
420	0.0118	1.5788	565	0.6954	93.2945	710	0.0953	12.7834
425	0.0230	3.0893	570	0.7469	100.2122	715	0.0808	10.8450
430	0.0442	5.9343	575	0.8028	107.7127	720	0.0688	9.2285
435	0.0834	11.1829	580	0.8556	114.7849	725	0.0587	7.8699
440	0.1595	21.4035	585	0.9019	120.9991	730	0.0489	6.5567
445	0.3336	44.7602	590	0.9469	127.0408	735	0.0413	5.5365
450	0.5617	75.3642	595	0.9773	131.1155	740	0.0358	4.8092
455	0.5278	70.8063	600	0.9964	133.6798	745	0.0311	4.1774
460	0.3636	48.7774	605	1.0000	134.1636	750	0.0257	3.4471
465	0.3156	42.3462	610	0.9895	132.7504	755	0.0222	2.9830
470	0.2574	34.5371	615	0.9634	129.2548	760	0.0192	2.5793
475	0.1967	26.3876	620	0.9249	124.0828	765	0.0157	2.1045
480	0.1860	24.9585	625	0.8742	117.2872	770	0.0147	1.9755
485	0.2026	27.1760	630	0.8192	109.9028	775	0.0112	1.5016
490	0.2267	30.4206	635	0.7538	101.1298	780	0.0099	1.3242
495	0.2671	35.8322	640	0.6876	92.2569	785	0.0071	0.9583
500	0.3136	42.0740	645	0.6206	83.2569	790	0.0094	1.2610
505	0.3545	47.5616	650	0.5535	74.2553	795	0.0049	0.6580
510	0.3888	52.1637	655	0.4908	65.8423	800	0.0057	0.7629
515	0.4164	55.8676	660	0.4310	57.8238			
520	0.4372	58.6510	665	0.3782	50.7354			

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TM30

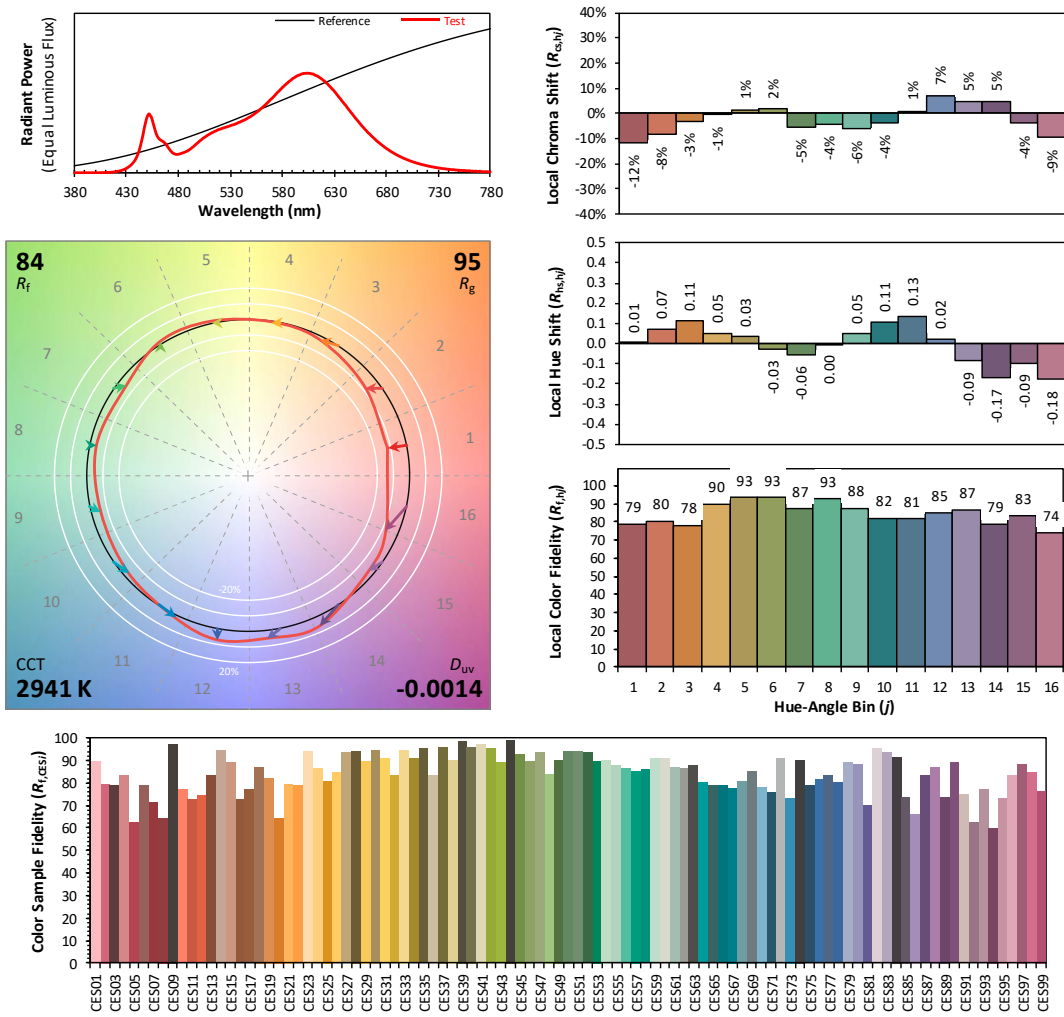
ANSI/IES TM-30-18 Color Rendition Report

Source: L128-XX80RA35000H1

Manufacturer: LEDVANCE LLC

Date: 2020/11/6

Model: LED45HIDRODAREA830MOG



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

x 0.4391
 y 0.4013
 u' 0.2532
 v' 0.5206

CIE 13.3-1995 (CRI)
 R_a 82
 R_g 4

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	1,771.0	27.8%	27.8%
0-40	2,916.7	45.8%	45.8%
0-60	5,159.9	81%	81.1%
60-90	1,126.0	17.7%	17.7%
70-100	428.5	6.7%	6.7%
90-120	60.6	1%	1%
0-90	6,285.8	98.7%	98.7%
90-180	80.4	1.3%	1.3%
0-180	6,366.3	100%	100%

Lumens Per Zone

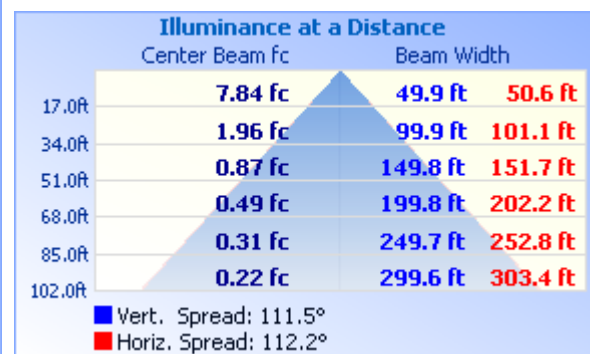
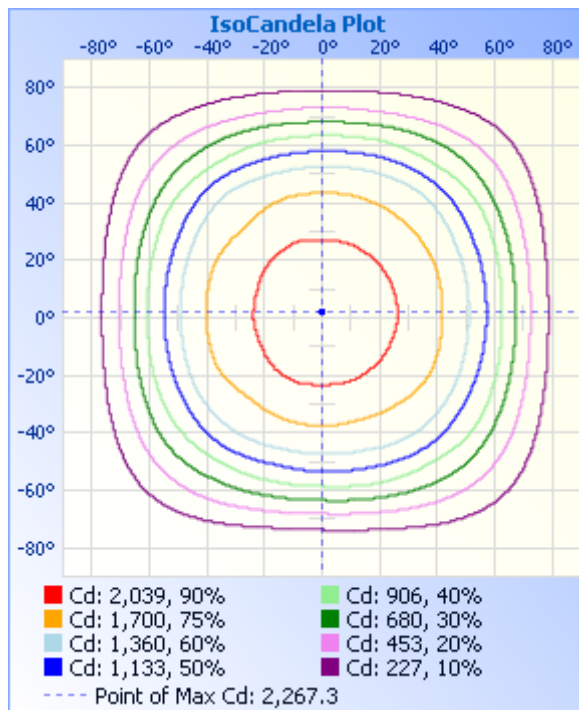
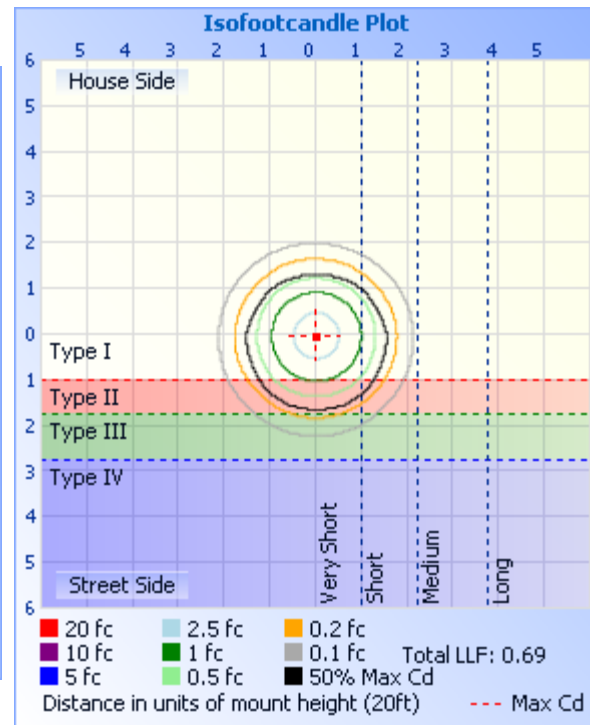
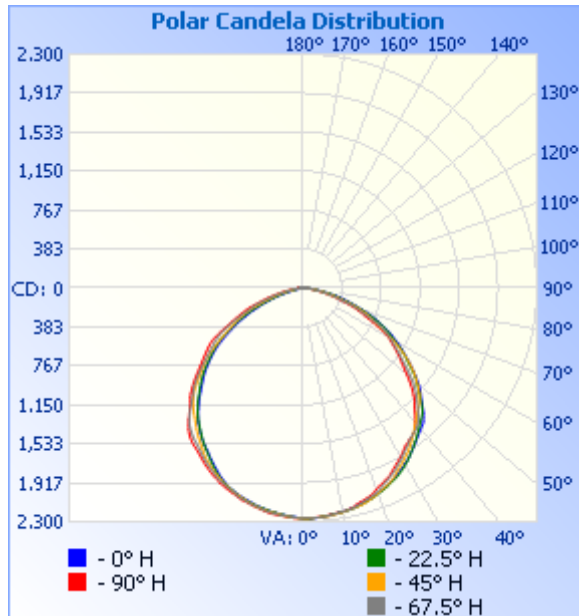
Zone	Lumens	% Total	Zone	Lumens	% Total
0-10	214.0	3.4%	90-100	28.5	0.4%
10-20	616.3	9.7%	100-110	23.6	0.4%
20-30	940.6	14.8%	110-120	8.5	0.1%
30-40	1,145.8	18.0%	120-130	5.3	0.1%
40-50	1,198.6	18.8%	130-140	4.7	0.1%
50-60	1,044.5	16.4%	140-150	4.0	0.1%
60-70	726.0	11.4%	150-160	3.1	0%
70-80	325.6	5.1%	160-170	2.0	0%
80-90	74.4	1.2%	170-180	0.7	0%



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Photometric Data



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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	2265	2265	2265	2265	2265	2265	2265	2265	2265	2265	2265	2265	2265	2265	2265	2265	2265
1	2266	2267	2266	2264	2265	2262	2262	2261	2260	2262	2264	2262	2265	2265	2266	2265	2266
2	2267	2266	2265	2264	2264	2259	2259	2256	2253	2256	2260	2260	2264	2266	2265	2267	2267
3	2265	2263	2263	2262	2259	2256	2255	2251	2248	2253	2255	2255	2260	2262	2264	2265	2265
4	2263	2260	2261	2260	2258	2254	2250	2247	2244	2246	2251	2251	2257	2260	2260	2263	2263
5	2259	2255	2258	2259	2253	2251	2246	2242	2238	2238	2245	2247	2250	2254	2257	2260	2259
6	2253	2253	2259	2255	2249	2246	2241	2237	2233	2235	2237	2241	2247	2250	2253	2255	2253
7	2250	2249	2255	2250	2243	2239	2235	2232	2226	2226	2230	2236	2243	2246	2249	2251	2250
8	2245	2243	2249	2243	2239	2233	2229	2224	2219	2220	2227	2231	2240	2243	2245	2245	2245
9	2240	2239	2243	2237	2235	2227	2222	2219	2212	2215	2221	2225	2233	2237	2241	2241	2240
10	2234	2237	2239	2232	2233	2222	2214	2212	2205	2205	2214	2218	2223	2230	2238	2236	2234
11	2228	2232	2232	2231	2227	2218	2205	2205	2196	2198	2206	2208	2215	2225	2232	2230	2228
12	2223	2227	2225	2227	2219	2214	2197	2196	2189	2191	2197	2196	2204	2214	2221	2224	2223
13	2217	2220	2220	2220	2209	2203	2189	2187	2176	2180	2188	2190	2198	2206	2216	2217	2217
14	2208	2213	2213	2207	2190	2190	2184	2175	2166	2173	2177	2180	2187	2198	2206	2210	2208
15	2201	2205	2209	2195	2178	2178	2176	2165	2154	2162	2164	2170	2176	2189	2195	2202	2201
16	2191	2198	2201	2181	2170	2163	2163	2151	2144	2150	2151	2158	2171	2179	2186	2194	2191
17	2183	2188	2189	2169	2158	2153	2150	2138	2132	2141	2140	2150	2159	2168	2178	2186	2183
18	2174	2176	2177	2160	2146	2142	2136	2126	2121	2125	2129	2135	2144	2157	2168	2177	2174
19	2161	2166	2166	2149	2129	2124	2121	2113	2109	2110	2115	2118	2131	2142	2155	2167	2161
20	2150	2154	2149	2135	2106	2108	2102	2100	2094	2098	2101	2105	2121	2127	2142	2156	2150
21	2137	2143	2135	2114	2089	2084	2089	2087	2078	2081	2087	2092	2109	2116	2129	2144	2137
22	2123	2132	2122	2094	2073	2064	2074	2071	2059	2067	2073	2078	2098	2104	2117	2130	2123
23	2110	2120	2109	2075	2057	2046	2056	2052	2037	2047	2054	2067	2085	2093	2104	2117	2110
24	2094	2105	2094	2056	2042	2027	2037	2034	2015	2027	2036	2052	2068	2079	2087	2102	2094
25	2079	2093	2076	2038	2028	2010	2019	2016	1988	2006	2018	2036	2053	2065	2069	2086	2079
26	2066	2079	2058	2020	2001	1992	1995	1989	1965	1981	2002	2014	2038	2047	2054	2069	2066
27	2049	2064	2033	2003	1979	1971	1968	1964	1941	1957	1982	1998	2022	2030	2037	2051	2049
28	2033	2045	2009	1978	1957	1945	1943	1939	1917	1931	1963	1981	2004	2015	2019	2032	2033
29	2018	2028	1989	1956	1937	1920	1918	1913	1895	1903	1943	1962	1988	1998	2002	2013	2018

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30	1999	2006	1968	1934	1918	1896	1893	1887	1868	1877	1921	1942	1967	1979	1984	1994	1999
31	1983	1988	1944	1911	1893	1875	1868	1862	1846	1854	1897	1921	1947	1959	1964	1977	1983
32	1964	1965	1924	1891	1871	1854	1844	1835	1826	1829	1868	1900	1928	1938	1941	1957	1964
33	1941	1940	1904	1869	1848	1832	1811	1808	1803	1804	1843	1881	1910	1916	1925	1933	1941
34	1922	1920	1877	1849	1836	1809	1781	1781	1779	1778	1817	1862	1895	1899	1905	1911	1922
35	1897	1896	1851	1826	1822	1786	1752	1756	1753	1750	1794	1845	1880	1883	1883	1887	1897
36	1878	1873	1826	1810	1813	1770	1723	1730	1727	1723	1768	1829	1863	1867	1861	1864	1878
37	1858	1850	1799	1796	1796	1756	1695	1701	1701	1696	1741	1810	1845	1854	1834	1841	1858
38	1839	1826	1773	1787	1778	1743	1664	1675	1674	1671	1712	1789	1820	1835	1809	1816	1839
39	1819	1803	1746	1771	1750	1722	1636	1645	1642	1642	1686	1766	1791	1814	1786	1795	1819
40	1803	1778	1721	1753	1718	1702	1607	1611	1610	1614	1660	1742	1754	1786	1760	1772	1803
41	1788	1754	1695	1726	1683	1668	1580	1576	1572	1580	1635	1709	1716	1758	1741	1749	1788
42	1769	1735	1671	1692	1644	1634	1555	1538	1536	1548	1611	1667	1674	1723	1716	1732	1769
43	1736	1713	1652	1657	1607	1597	1533	1504	1501	1517	1585	1627	1638	1680	1696	1718	1736
44	1705	1690	1633	1622	1580	1558	1509	1468	1461	1481	1559	1584	1597	1638	1674	1696	1705
45	1662	1653	1614	1584	1549	1523	1482	1432	1426	1445	1528	1546	1568	1596	1648	1664	1662
46	1627	1615	1590	1552	1508	1495	1448	1392	1389	1411	1495	1507	1545	1556	1626	1628	1627
47	1588	1576	1564	1518	1470	1452	1408	1354	1355	1378	1459	1477	1511	1528	1594	1589	1588
48	1556	1537	1537	1479	1427	1415	1362	1317	1323	1344	1410	1444	1467	1505	1563	1552	1556
49	1524	1496	1505	1440	1384	1366	1320	1281	1287	1308	1366	1398	1431	1462	1535	1517	1524
50	1488	1464	1467	1395	1337	1320	1283	1239	1252	1273	1323	1357	1387	1416	1495	1485	1488
51	1444	1429	1430	1347	1292	1275	1258	1197	1212	1233	1282	1311	1346	1381	1447	1457	1444
52	1403	1388	1396	1300	1251	1233	1220	1156	1175	1192	1245	1265	1302	1333	1403	1415	1403
53	1361	1344	1357	1255	1214	1189	1175	1115	1136	1152	1207	1221	1263	1287	1372	1373	1361
54	1319	1298	1314	1211	1178	1140	1127	1074	1097	1114	1165	1177	1227	1244	1332	1330	1319
55	1277	1256	1274	1169	1140	1102	1079	1038	1056	1079	1118	1138	1195	1205	1282	1287	1277
56	1231	1218	1224	1133	1105	1064	1026	1004	1013	1043	1067	1103	1161	1170	1244	1247	1231
57	1190	1178	1176	1092	1071	1027	977	966	962	1002	1018	1069	1131	1134	1195	1207	1190
58	1151	1136	1124	1057	1037	989	927	920	913	962	969	1036	1100	1100	1142	1160	1151
59	1111	1093	1073	1024	1005	948	881	867	862	913	919	1006	1072	1075	1090	1118	1111
60	1071	1046	1021	991	969	912	836	817	817	860	872	972	1032	1045	1036	1076	1071
61	1028	1006	961	951	927	878	793	772	774	813	827	933	986	1010	986	1029	1028

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62	991	964	909	918	876	841	746	728	727	764	789	888	924	970	933	987	991
63	947	928	862	878	814	796	706	686	675	722	754	833	865	919	886	946	947
64	899	886	815	824	762	746	668	641	631	673	717	784	811	859	848	906	899
65	854	842	775	767	710	690	631	591	588	621	679	725	765	806	809	861	854
66	812	800	736	716	665	639	590	549	540	576	638	675	716	749	773	809	812
67	768	752	698	667	625	590	556	506	490	531	601	628	678	699	735	765	768
68	717	705	666	618	585	545	515	456	441	482	556	583	638	652	697	719	717
69	665	651	624	580	553	506	467	409	401	435	502	545	600	614	653	666	665
70	611	602	572	540	503	473	424	366	357	389	453	510	559	576	601	616	611
71	564	547	520	505	450	426	376	322	320	339	408	469	504	544	542	559	564
72	521	499	471	449	398	374	337	283	277	302	367	419	457	493	490	505	521
73	478	452	424	396	367	332	302	245	239	269	330	370	414	437	450	459	478
74	444	408	388	353	338	301	270	213	204	233	296	337	382	386	408	421	444
75	412	375	350	320	289	273	237	185	167	202	265	309	345	352	374	391	412
76	370	347	302	282	254	230	200	159	133	173	228	269	297	318	329	360	370
77	323	314	260	246	229	203	172	136	109	148	199	233	265	272	283	331	323
78	280	272	234	216	191	179	151	109	82	122	172	209	237	243	255	287	280
79	249	231	206	186	171	152	121	86	61	97	143	178	200	213	228	245	249
80	205	200	183	161	142	130	105	69	39	75	123	156	177	179	197	209	205
81	171	163	154	134	122	112	84	53	26	60	101	131	148	159	175	173	171
82	149	138	130	114	101	93	72	40	17	47	85	111	128	133	145	143	149
83	131	119	107	97	85	79	59	31	10	36	69	92	105	111	125	124	131
84	110	103	91	81	71	65	48	24	7	28	57	78	88	94	102	109	110
85	91	86	79	69	59	53	38	19	5	22	48	67	74	77	86	94	91
86	81	76	69	60	47	41	30	14	4	17	38	54	62	67	74	77	81
87	72	66	58	47	30	27	21	11	3	13	29	39	49	58	65	70	72
88	65	59	48	33	24	22	17	8	4	9	20	27	32	43	54	60	65
89	56	51	41	30	23	21	16	6	3	8	17	23	25	32	45	52	56
90	48	43	35	28	23	21	16	7	3	7	16	22	23	30	38	46	48
91	37	33	31	28	24	22	16	7	3	7	16	22	22	27	33	36	37
92	33	29	30	28	27	26	20	7	3	7	18	23	24	27	30	31	33
93	27	27	31	33	36	34	22	7	2	8	22	27	26	28	30	28	27

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95	23	26	33	40	42	37	23	7	2	8	24	38	42	39	32	25	23
96	27	28	32	39	41	37	23	7	3	7	24	38	44	39	32	26	27
97	30	28	33	38	40	36	21	7	3	6	23	38	44	39	32	27	30
98	31	28	34	38	41	34	22	5	2	6	22	38	44	39	33	26	31
99	31	28	35	37	39	36	19	5	3	5	22	37	44	40	34	27	31
100	31	28	35	39	41	33	19	3	3	3	21	37	43	39	33	27	31
101	32	27	35	38	39	33	18	2	3	3	19	34	44	40	34	27	32
102	31	27	32	38	39	32	16	2	3	3	18	34	43	38	32	25	31
103	31	27	32	37	39	30	16	3	3	3	15	35	40	38	30	25	31
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109	24	23	17	27	28	21	4	3	3	3	4	23	28	27	17	22	24
110	13	21	16	23	25	17	3	2	4	3	4	21	26	26	15	20	13
111	9	19	15	20	22	14	3	3	3	3	3	18	24	23	14	19	9
112	8	19	14	16	18	10	3	3	3	3	4	11	22	19	13	18	8
113	7	19	14	12	13	6	3	3	3	3	3	8	18	12	12	17	7
114	7	19	14	9	8	4	3	3	3	4	4	5	10	8	12	18	7
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116	7	17	12	6	3	3	3	4	3	4	3	4	5	5	10	16	7
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120	6	16	10	6	2	3	3	4	4	4	4	4	3	4	9	15	6
121	6	15	9	6	3	3	3	4	4	4	5	4	3	4	9	14	6
122	6	15	10	5	3	3	3	4	4	4	4	4	3	4	9	14	6
123	6	14	10	4	3	3	4	4	4	5	5	4	3	4	9	13	6
124	6	13	11	5	3	3	4	4	4	5	4	4	3	5	9	12	6
125	6	12	11	5	3	4	4	4	4	5	5	5	3	5	10	11	6

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126	5	11	11	5	3	4	4	4	4	5	5	4	3	4	10	10	5
127	6	11	11	5	3	3	3	4	4	6	5	4	3	4	10	10	6
128	5	11	11	5	3	3	4	4	4	5	4	5	3	5	10	10	5
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158	6	7	7	7	6	6	6	7	6	8	8	7	6	6	7	7	6
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2.2 Electrical, Photometric and Chromaticity Measurements*(Refer to Work Instruction BL-QP-033)*

Test date	2020-11-04	Test Ambient:	25.2 °C
Test Orientation	As intended	Stabilization Time (min)	90
Model Number	LED45HIDRODAREA840MOG		

Electrical Measurement:

Sample No.	Voltage (Vac)	Frequency (Hz)	Current (A)	Power (W)	Power Factor	THD %
BLC201002	120.0	60	0.378	44.67	0.985	14.25
6E-C2	277.0	60	0.175	44.55	0.921	15.24
DLC Pass Criteria					$\geq 0.9(-3\%)$	$\leq 20(+5)$

Chromaticity Measurement - Sphere-Spectroradiometer Method:

Parameter	Result	Special Color Rendering Indices			
Test Voltage (V)	120.0	R1	80	R9	4
Frequency (Hz)	60	R2	88	R10	73
CCT (K)	4028	R3	95	R11	81
Duv	0.0012	R4	82	R12	60
Chromaticity (x, y)	x=0.3800 y=0.3791	R5	81	R13	82
Chromaticity (u', v')	u(u')=0.2239 v'=0.5026	R6	84	R14	97
Color Rendering Index (CRI)	82	R7	85	R15	74
R9	4	R8	63	--	--
Rf	84				
Rg	95				
Rcs,h1(%)	-12				

Photometric Measurement – Goniophotometer Method:

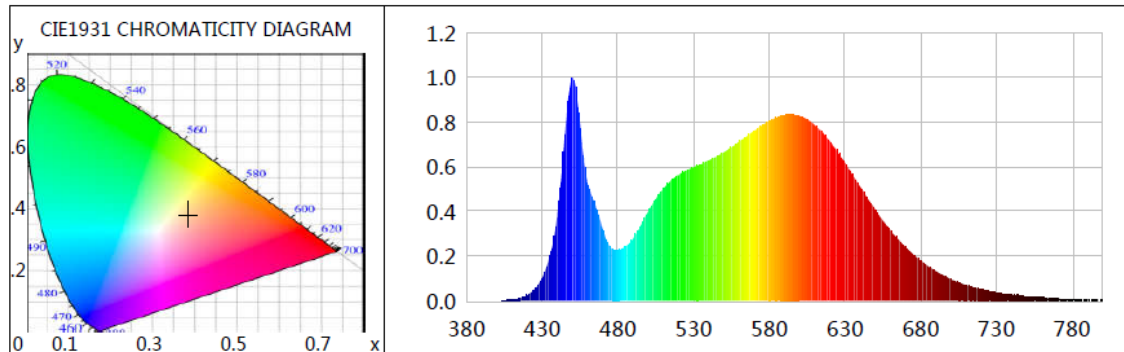
Parameter	Result		Rating	Tolerance
Test Voltage (V)	120.0	277.0	--	--
Frequency (Hz)	60	60	--	--
Total Luminous (lm)	6755.6	6755.2	6750	Comply -10%
Luminous Efficacy (lm/W)	151.23	151.63	150	Comply -3%
Most worst Luminous/Highest Watts	151.22		--	--



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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	0.0536	525	0.5825	81.8562	670	0.2383	33.4922
385	0.0003	0.0415	530	0.5971	83.9158	675	0.2065	29.0243
390	0.0010	0.1360	535	0.6113	85.9091	680	0.1788	25.1326
395	0.0003	0.0380	540	0.6293	88.4361	685	0.1530	21.5018
400	0.0010	0.1418	545	0.6440	90.5114	690	0.1318	18.5171
405	0.0022	0.3120	550	0.6653	93.4935	695	0.1135	15.9449
410	0.0046	0.6486	555	0.6864	96.4622	700	0.0954	13.4067
415	0.0107	1.5064	560	0.7124	100.1155	705	0.0818	11.4911
420	0.0242	3.4034	565	0.7363	103.4799	710	0.0701	9.8535
425	0.0514	7.2291	570	0.7613	106.9945	715	0.0590	8.2917
430	0.1040	14.6111	575	0.7864	110.5191	720	0.0506	7.1055
435	0.1988	27.9432	580	0.8066	113.3522	725	0.0428	6.0182
440	0.3850	54.1119	585	0.8201	115.2541	730	0.0361	5.0766
445	0.7473	105.0194	590	0.8314	116.8444	735	0.0305	4.2813
450	1.0000	140.5349	595	0.8345	117.2724	740	0.0266	3.7356
455	0.7773	109.2420	600	0.8281	116.3792	745	0.0233	3.2747
460	0.5230	73.4931	605	0.8124	114.1659	750	0.0201	2.8255
465	0.4274	60.0626	610	0.7862	110.4908	755	0.0174	2.4417
470	0.3156	44.3537	615	0.7555	106.1729	760	0.0141	1.9748
475	0.2374	33.3580	620	0.7137	100.3013	765	0.0123	1.7350
480	0.2266	31.8394	625	0.6647	93.4173	770	0.0104	1.4581
485	0.2428	34.1174	630	0.6166	86.6549	775	0.0078	1.1024
490	0.2777	39.0295	635	0.5642	79.2833	780	0.0079	1.1073
495	0.3367	47.3218	640	0.5097	71.6294	785	0.0057	0.8010
500	0.4000	56.2094	645	0.4569	64.2144	790	0.0065	0.9108
505	0.4561	64.0968	650	0.4062	57.0907	795	0.0043	0.6011
510	0.5030	70.6828	655	0.3590	50.4530	800	0.0035	0.4890
515	0.5387	75.7033	660	0.3142	44.1507			
520	0.5632	79.1490	665	0.2745	38.5775			

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TM30

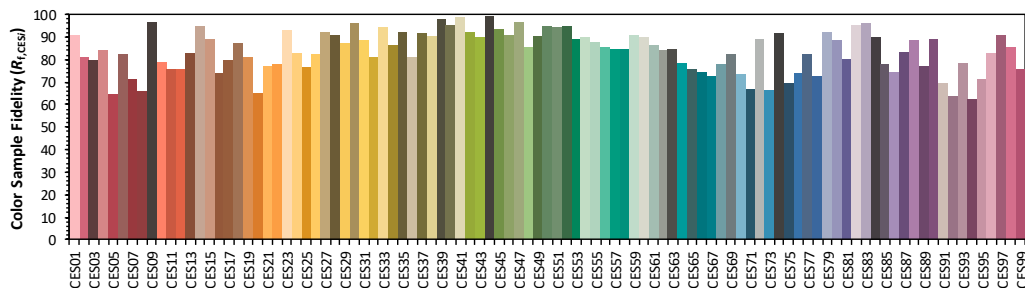
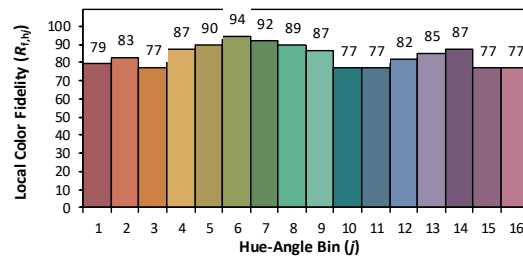
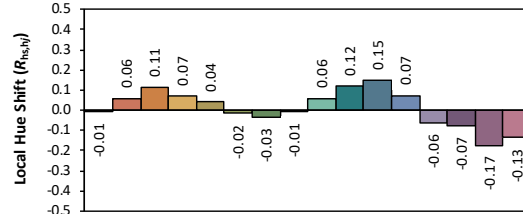
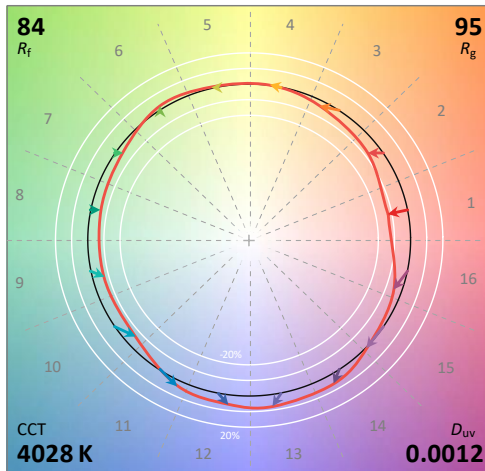
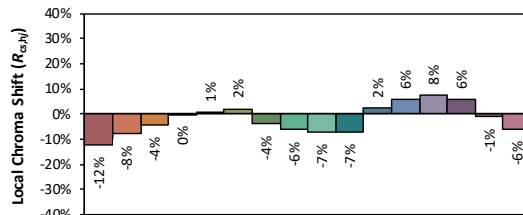
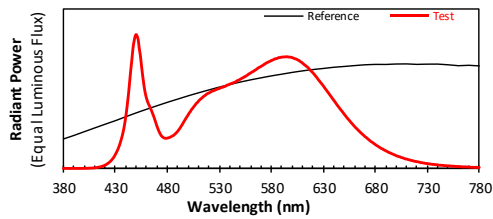
ANSI/IES TM-30-18 Color Rendition Report

Source: L128-XX80RA35000H1

Manufacturer: LEDVANCE LLC

Date: 2020/11/6

Model: LED45HIDRODAREA840MOG



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

x 0.3800
 y 0.3791
 u' 0.2239
 v' 0.5026

CIE 13.3-1995
(CRI)

R_a 82
 R_g 4

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	1,867.4	27.6%	27.6%
0-40	3,079.6	45.6%	45.6%
0-60	5,464.5	80.9%	80.9%
60-90	1,205.3	17.8%	17.8%
70-100	459.1	6.8%	6.8%
90-120	63.7	0.9%	0.9%
0-90	6,669.9	98.7%	98.7%
90-180	85.0	1.3%	1.3%
0-180	6,754.9	100%	100%

Lumens Per Zone

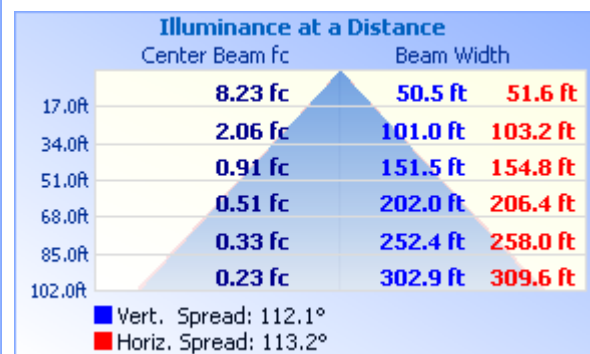
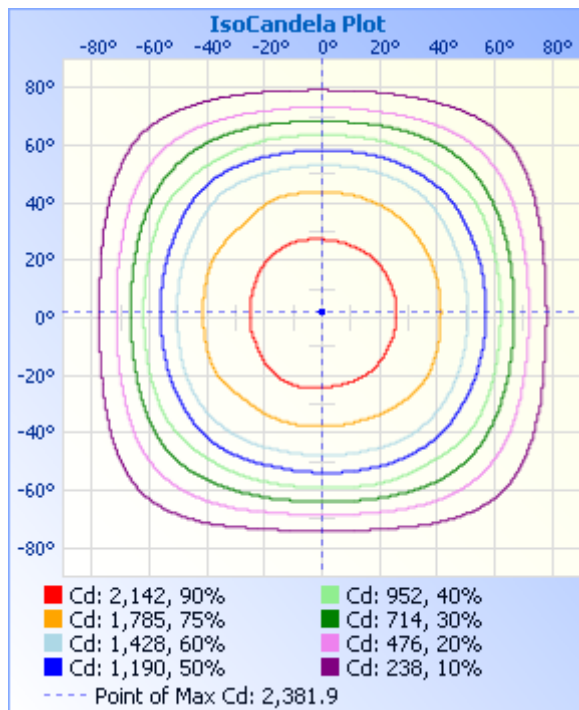
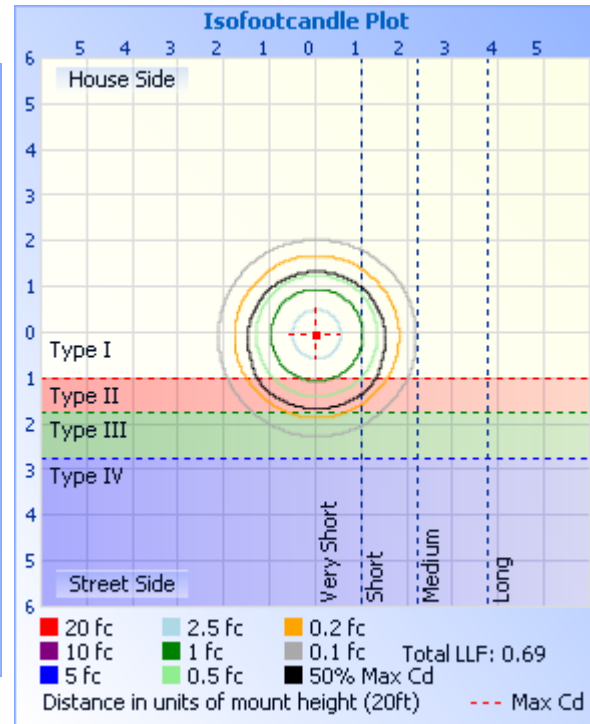
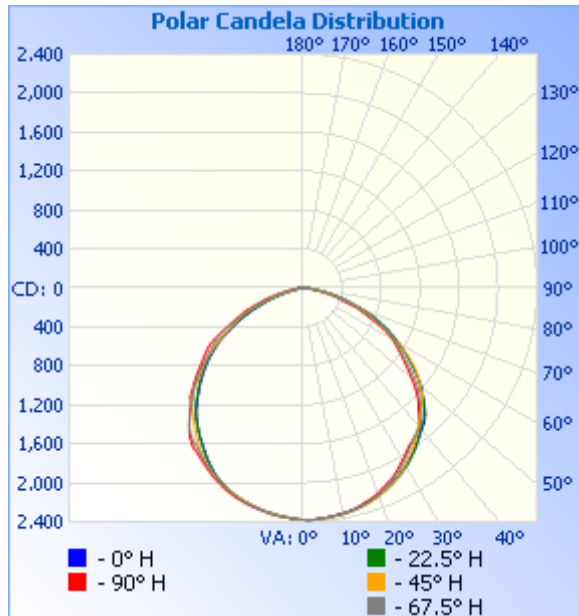
Zone	Lumens	% Total	Zone	Lumens	% Total
0-10	224.9	3.3%	90-100	29.8	0.4%
10-20	648.6	9.6%	100-110	24.8	0.4%
20-30	993.9	14.7%	110-120	9.2	0.1%
30-40	1,212.2	17.9%	120-130	5.7	0.1%
40-50	1,271.3	18.8%	130-140	5.1	0.1%
50-60	1,113.6	16.5%	140-150	4.3	0.1%
60-70	776.0	11.5%	150-160	3.3	0%
70-80	349.4	5.2%	160-170	2.1	0%
80-90	79.9	1.2%	170-180	0.7	0%



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Photometric Data



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Certificate#4810.01

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	2377	2377	2377	2377	2377	2377	2377	2377	2377	2377	2377	2377	2377	2377	2377	2377	2377
1	2380	2379	2379	2381	2378	2377	2375	2377	2375	2376	2371	2371	2375	2377	2378	2381	2380
2	2382	2381	2376	2381	2379	2377	2373	2373	2372	2372	2369	2368	2371	2375	2375	2381	2382
3	2378	2379	2378	2379	2377	2376	2368	2367	2366	2364	2363	2366	2366	2373	2376	2379	2378
4	2373	2376	2376	2378	2373	2374	2366	2363	2358	2359	2357	2361	2361	2370	2372	2375	2373
5	2370	2373	2373	2375	2369	2370	2363	2359	2353	2353	2353	2355	2358	2364	2369	2373	2370
6	2366	2368	2373	2374	2366	2367	2358	2353	2349	2347	2348	2350	2354	2363	2363	2364	2366
7	2363	2366	2367	2366	2365	2361	2355	2348	2342	2340	2342	2343	2350	2360	2359	2362	2363
8	2358	2358	2365	2360	2358	2356	2352	2343	2337	2331	2336	2341	2343	2353	2356	2359	2358
9	2355	2356	2362	2359	2353	2349	2346	2337	2330	2327	2331	2331	2335	2344	2349	2351	2355
10	2347	2353	2356	2354	2348	2341	2338	2329	2321	2318	2321	2320	2326	2338	2347	2347	2347
11	2339	2347	2347	2349	2343	2336	2330	2321	2313	2310	2314	2314	2320	2325	2339	2340	2339
12	2336	2340	2341	2346	2338	2332	2321	2313	2303	2301	2302	2303	2310	2320	2325	2336	2336
13	2330	2334	2334	2339	2329	2322	2312	2304	2296	2291	2289	2293	2302	2313	2316	2330	2330
14	2322	2326	2328	2329	2315	2312	2306	2295	2282	2281	2280	2288	2296	2303	2307	2321	2322
15	2313	2323	2322	2318	2304	2304	2296	2287	2272	2270	2268	2279	2287	2298	2298	2313	2313
16	2302	2314	2314	2305	2292	2287	2285	2274	2263	2259	2255	2269	2276	2287	2290	2306	2302
17	2291	2305	2305	2297	2281	2273	2273	2260	2251	2248	2246	2256	2264	2275	2280	2294	2291
18	2283	2293	2295	2283	2271	2260	2259	2247	2237	2238	2235	2242	2256	2261	2269	2285	2283
19	2272	2282	2286	2268	2257	2248	2246	2238	2226	2222	2223	2229	2241	2249	2263	2273	2272
20	2261	2271	2270	2258	2239	2234	2229	2226	2207	2210	2209	2217	2229	2237	2250	2260	2261
21	2247	2257	2256	2241	2222	2215	2215	2210	2191	2194	2194	2203	2218	2225	2237	2246	2247
22	2230	2246	2243	2225	2203	2197	2199	2194	2173	2178	2180	2189	2202	2215	2224	2233	2230
23	2218	2232	2226	2203	2186	2177	2184	2179	2155	2157	2165	2172	2184	2198	2207	2216	2218
24	2202	2219	2213	2187	2170	2155	2165	2163	2140	2139	2148	2151	2169	2180	2194	2201	2202
25	2186	2201	2199	2167	2156	2138	2149	2147	2119	2119	2132	2135	2152	2163	2179	2182	2186
26	2171	2187	2180	2146	2132	2117	2128	2129	2094	2099	2113	2118	2137	2145	2160	2164	2171
27	2154	2170	2164	2128	2111	2095	2108	2103	2068	2074	2095	2096	2117	2130	2144	2147	2154
28	2137	2151	2144	2109	2085	2072	2083	2077	2042	2049	2072	2077	2098	2110	2126	2130	2137
29	2118	2135	2120	2085	2062	2048	2057	2049	2015	2021	2051	2058	2079	2090	2106	2110	2118

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30	2102	2119	2098	2058	2038	2021	2032	2021	1989	1991	2026	2037	2059	2070	2083	2092	2102
31	2080	2100	2073	2035	2017	1995	2009	1988	1957	1963	2002	2014	2040	2048	2065	2074	2080
32	2060	2077	2048	2012	1992	1970	1986	1957	1930	1935	1979	1995	2023	2029	2044	2052	2060
33	2042	2053	2031	1989	1968	1950	1958	1926	1903	1907	1953	1978	2007	2011	2021	2031	2042
34	2021	2032	2006	1966	1948	1927	1927	1895	1877	1880	1926	1956	1996	1990	2003	2008	2021
35	1999	2009	1979	1943	1935	1902	1892	1867	1851	1852	1897	1942	1978	1977	1979	1988	1999
36	1978	1985	1952	1919	1922	1881	1859	1841	1821	1822	1867	1926	1950	1963	1950	1965	1978
37	1956	1960	1922	1904	1910	1867	1825	1810	1793	1795	1840	1905	1927	1940	1927	1939	1956
38	1935	1933	1893	1886	1893	1857	1791	1782	1767	1768	1806	1881	1896	1914	1901	1914	1935
39	1913	1908	1866	1879	1875	1839	1750	1752	1736	1739	1779	1852	1859	1890	1879	1890	1913
40	1893	1886	1838	1861	1845	1819	1719	1723	1706	1712	1752	1819	1817	1858	1857	1866	1893
41	1874	1864	1810	1837	1814	1794	1687	1689	1673	1680	1725	1781	1774	1820	1834	1848	1874
42	1860	1841	1783	1813	1774	1762	1662	1656	1633	1646	1699	1736	1735	1780	1810	1820	1860
43	1831	1825	1755	1781	1738	1727	1636	1616	1596	1609	1670	1683	1699	1729	1785	1802	1831
44	1797	1803	1735	1744	1700	1690	1614	1579	1560	1572	1640	1646	1659	1692	1759	1783	1797
45	1761	1768	1715	1704	1674	1647	1584	1538	1518	1533	1606	1607	1631	1652	1729	1753	1761
46	1724	1729	1695	1665	1639	1618	1555	1499	1481	1495	1569	1574	1609	1614	1697	1717	1724
47	1686	1693	1669	1632	1596	1587	1517	1457	1446	1458	1528	1545	1567	1588	1662	1684	1686
48	1650	1651	1646	1601	1554	1546	1478	1412	1407	1422	1480	1505	1519	1555	1629	1644	1650
49	1620	1615	1617	1559	1510	1505	1431	1372	1368	1384	1428	1454	1482	1511	1590	1605	1620
50	1590	1570	1576	1519	1461	1454	1392	1332	1329	1344	1377	1411	1440	1464	1547	1568	1590
51	1544	1541	1538	1471	1414	1402	1356	1292	1291	1306	1334	1364	1399	1427	1502	1540	1544
52	1497	1498	1498	1418	1368	1353	1319	1247	1252	1268	1296	1311	1357	1378	1465	1499	1497
53	1450	1454	1465	1371	1324	1302	1272	1204	1211	1225	1253	1265	1315	1337	1431	1457	1450
54	1405	1408	1427	1321	1286	1254	1226	1159	1168	1182	1206	1224	1281	1297	1380	1413	1405
55	1361	1361	1384	1276	1245	1204	1177	1120	1122	1136	1155	1186	1247	1255	1334	1367	1361
56	1314	1310	1334	1232	1209	1163	1127	1076	1076	1098	1109	1145	1214	1220	1286	1321	1314
57	1265	1269	1289	1194	1172	1124	1072	1035	1035	1060	1053	1113	1181	1186	1237	1272	1265
58	1219	1226	1233	1157	1136	1084	1020	991	985	1019	1004	1079	1148	1152	1184	1226	1219
59	1174	1178	1179	1124	1100	1040	973	946	932	969	954	1044	1107	1119	1133	1174	1174
60	1128	1131	1117	1088	1069	1001	924	898	875	915	908	1007	1053	1090	1079	1126	1128
61	1087	1082	1062	1044	1026	966	877	845	828	861	867	958	991	1048	1030	1078	1087

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62	1046	1036	1005	1007	975	932	826	794	783	812	824	903	934	994	981	1033	1046
63	1002	993	944	974	921	884	784	750	731	762	787	848	873	932	936	991	1002
64	959	953	898	927	860	832	742	707	681	713	746	791	823	871	891	944	959
65	906	905	851	869	800	774	700	657	635	662	705	732	771	816	844	901	906
66	862	862	810	813	745	719	660	603	583	607	667	679	728	762	806	848	862
67	815	817	770	754	701	665	621	555	534	560	619	638	686	710	766	798	815
68	767	766	731	699	659	617	580	507	476	507	566	595	646	666	718	749	767
69	714	714	696	657	622	576	533	455	432	455	509	553	605	622	669	696	714
70	656	666	647	613	576	539	477	406	389	406	458	511	548	588	605	642	656
71	605	609	595	573	519	497	425	363	346	362	408	455	493	540	551	580	605
72	559	557	537	525	464	434	382	318	307	315	369	404	450	483	502	530	559
73	509	500	486	470	421	384	344	279	262	280	334	368	412	433	462	482	509
74	472	451	442	417	392	347	313	240	221	244	301	333	376	389	422	437	472
75	432	414	401	371	344	322	273	209	186	209	257	295	323	353	384	404	432
76	396	379	359	340	296	276	231	180	149	181	221	253	286	303	328	372	396
77	348	347	310	295	273	237	199	152	120	151	194	230	264	265	285	342	348
78	300	305	270	257	230	215	177	122	91	122	168	194	217	244	259	296	300
79	267	265	241	228	203	179	145	98	66	97	135	168	197	201	222	248	267
80	223	229	214	193	173	161	124	79	46	75	119	144	161	178	194	216	223
81	185	186	188	169	149	135	100	62	30	59	97	124	140	149	171	178	185
82	159	157	159	143	124	113	86	46	19	46	82	101	118	127	144	148	159
83	138	132	131	121	105	96	72	36	12	35	69	86	97	105	125	126	138
84	118	116	111	101	88	80	57	28	8	28	55	73	80	88	101	108	118
85	97	97	94	86	75	68	47	22	5	21	44	61	68	74	84	94	97
86	84	82	85	75	64	55	37	17	4	16	35	48	57	64	74	77	84
87	74	74	70	64	46	38	28	12	3	13	25	31	40	52	64	70	74
88	66	65	63	46	29	27	20	10	4	10	19	25	28	37	52	60	66
89	57	56	49	36	25	23	18	8	3	8	17	23	24	31	44	52	57
90	50	49	42	32	24	23	17	8	3	8	16	22	23	28	37	45	50
91	38	37	35	29	25	23	18	7	3	7	17	22	23	26	32	35	38
92	33	30	32	29	26	24	20	7	3	7	19	24	24	26	30	30	33
93	26	28	32	30	28	29	25	8	3	8	24	30	27	28	29	27	26

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94	27	26	36	35	39	37	25	8	3	8	24	38	36	33	32	25	27
95	24	25	35	43	47	40	26	8	3	7	25	40	45	40	33	25	24
96	27	29	34	43	47	41	25	8	3	8	24	41	48	41	32	27	27
97	33	31	35	43	47	40	25	6	3	7	24	39	46	41	32	28	33
98	33	30	36	42	46	40	23	7	3	7	22	39	45	41	32	28	33
99	35	30	36	42	45	38	23	6	3	6	23	37	44	40	35	29	35
100	35	30	35	40	43	38	21	4	3	4	21	39	45	38	33	29	35
101	35	29	32	40	43	37	21	3	3	3	20	35	43	41	32	29	35
102	35	29	32	40	43	35	19	3	3	4	19	36	45	39	30	26	35
103	33	28	27	37	41	34	17	3	3	3	16	37	41	37	27	26	33
104	33	28	28	37	39	34	16	3	2	3	15	35	41	38	25	26	33
105	31	27	28	36	40	31	15	3	3	4	14	33	41	37	24	25	31
106	30	27	25	32	38	28	13	3	2	3	13	30	40	34	23	24	30
107	29	25	22	29	32	27	9	2	3	3	11	28	36	31	23	23	29
108	27	25	18	28	29	27	7	3	3	3	8	26	32	28	21	23	27
109	26	25	17	29	28	24	5	3	3	2	5	24	29	27	19	23	26
110	11	23	15	25	28	21	3	3	3	4	4	21	26	25	15	22	11
111	8	21	15	21	25	17	2	3	3	4	4	20	26	22	13	20	8
112	8	20	15	15	22	12	3	3	3	4	4	17	23	20	12	19	8
113	7	20	14	10	16	7	3	4	3	4	4	11	20	16	11	19	7
114	7	20	14	8	10	4	3	3	4	3	4	7	18	10	11	19	7
115	7	20	14	6	6	4	3	4	3	5	4	5	13	7	11	19	7
116	7	19	13	6	4	3	3	3	2	4	4	4	7	5	10	18	7
117	8	18	12	6	2	3	3	3	4	4	5	4	4	4	10	17	8
118	7	17	12	6	3	3	3	4	4	3	4	4	3	5	9	17	7
119	7	17	11	6	3	3	4	4	4	4	4	4	3	5	9	16	7
120	7	17	11	6	2	3	3	4	4	4	4	5	3	4	9	16	7
121	7	16	11	6	2	3	4	4	4	4	5	4	3	5	9	15	7
122	7	16	11	6	2	3	4	4	4	5	5	5	3	5	10	15	7
123	6	15	12	5	2	3	4	4	4	5	5	5	3	5	10	14	6
124	7	14	11	6	3	3	4	4	4	5	5	4	3	5	10	13	7
125	6	14	12	6	3	3	4	4	4	5	5	5	3	5	10	12	6

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126	6	13	12	5	3	4	5	5	4	5	4	4	3	5	10	12	6
127	6	12	12	5	3	3	4	5	4	5	5	5	3	5	11	11	6
128	6	12	12	6	3	3	5	5	5	5	5	5	4	5	11	11	6
129	6	12	12	6	3	4	5	5	5	4	6	4	3	5	10	12	6
130	6	12	12	6	3	4	5	5	4	5	5	6	4	5	10	12	6
131	6	13	12	5	3	4	5	5	5	5	4	5	3	5	10	12	6
132	6	13	11	6	3	4	5	5	4	6	5	5	3	5	10	12	6
133	6	13	11	6	3	4	5	5	5	6	6	5	4	6	10	12	6
134	6	13	11	6	4	4	5	5	5	6	6	6	4	5	9	12	6
135	7	13	10	5	3	4	4	5	5	6	6	5	4	5	9	12	7
136	7	13	10	6	4	4	5	6	5	6	6	6	4	6	9	12	7
137	6	13	10	6	4	4	6	6	5	6	5	6	4	6	8	12	6
138	6	13	9	6	4	5	6	5	5	6	6	6	4	6	8	12	6
139	6	13	9	7	4	5	5	6	6	6	6	6	4	6	8	12	6
140	7	12	9	6	5	5	6	6	6	7	6	6	5	5	8	12	7
141	7	12	8	6	5	5	6	6	6	6	7	7	5	6	8	11	7
142	7	11	8	6	4	5	6	6	6	6	6	6	5	5	8	11	7
143	8	11	8	6	5	5	6	6	6	7	7	6	5	6	8	10	8
144	7	10	8	6	5	4	6	6	6	7	7	7	5	6	8	10	7
145	8	10	8	6	5	5	6	6	6	7	7	7	5	6	7	9	8
146	7	10	7	6	5	6	6	6	7	7	7	7	5	6	7	9	7
147	7	9	8	6	5	6	6	6	7	7	7	7	5	6	7	9	7
148	7	8	8	7	5	5	7	6	6	8	7	7	5	6	7	9	7
149	7	9	8	6	5	6	7	7	7	7	7	8	5	7	8	8	7
150	7	9	8	7	5	6	6	7	7	8	8	7	5	7	8	8	7
151	7	9	8	7	6	6	7	7	7	8	7	7	6	7	8	8	7
152	7	8	8	7	6	6	7	7	7	8	7	8	6	6	8	8	7
153	7	7	8	8	6	5	7	8	6	8	8	8	6	7	8	8	7
154	8	8	8	7	6	6	6	7	7	8	8	8	6	7	7	8	8
155	8	8	9	8	6	6	6	8	7	8	8	8	5	7	8	7	8
156	7	8	8	7	6	5	7	8	7	8	8	8	6	7	8	7	7
157	8	8	7	7	5	6	8	7	7	9	8	8	6	7	8	8	8

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158	8	8	8	8	6	6	7	8	8	8	8	8	6	7	7	7	8
159	7	8	8	8	6	6	7	7	7	8	8	8	6	8	7	7	7
160	7	8	8	7	5	7	7	8	7	8	8	8	6	8	8	7	7
161	8	8	8	8	6	6	7	7	7	8	8	8	6	7	8	8	8
162	8	8	8	8	6	7	7	8	7	8	9	8	6	8	8	7	8
163	8	8	8	8	5	7	8	8	7	8	8	8	6	8	8	8	8
164	7	8	8	8	6	7	7	8	8	8	9	8	7	7	8	8	7
165	8	8	8	8	6	7	6	8	7	8	9	8	7	7	8	8	8
166	8	8	8	7	6	7	7	8	8	8	8	8	7	8	8	7	8
167	8	8	8	8	6	6	8	8	7	8	8	8	7	8	7	8	8
168	9	8	8	8	6	7	7	8	8	8	9	8	7	8	7	7	9
169	9	8	8	8	6	7	8	8	8	8	9	8	7	7	8	7	9
170	8	8	8	8	6	7	8	8	7	8	9	8	7	8	7	8	8
171	8	8	8	8	7	7	8	8	8	8	9	8	7	8	8	8	8
172	8	8	8	8	6	7	8	8	8	8	9	9	7	7	7	7	8
173	8	7	8	8	6	7	8	7	8	8	9	9	6	8	8	8	8
174	8	7	8	8	6	7	8	7	8	8	9	9	7	7	7	7	8
175	8	7	8	8	7	7	7	8	8	8	9	9	7	8	7	7	8
176	8	8	8	7	6	7	8	8	8	8	9	8	5	7	7	7	8
177	8	8	8	8	7	7	7	8	7	8	8	8	6	7	7	7	8
178	8	7	7	7	6	6	7	8	7	8	8	8	6	7	7	7	8
179	8	8	7	8	6	7	7	8	8	8	8	8	6	7	8	7	8
180	8	8	7	8	6	6	8	8	7	8	8	7	7	8	8	7	8

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

Test date	2020-11-04	Test Ambient:	25.2 °C
Test Orientation	As intended	Stabilization Time (min)	90
Model Number	LED45HIDRODAREA850MOG		

Electrical Measurement:

Sample No.	Voltage (Vac)	Frequency (Hz)	Current (A)	Power (W)	Power Factor	THD %
BLC201002	120.0	60	0.370	43.75	0.985	14.19
6E-C3	277.0	60	0.172	43.95	0.920	14.59
DLC Pass Criteria					>= 0.9(-3%)	<= 20(+5)

Chromaticity Measurement - Sphere-Spectroradiometer Method:

Parameter	Result	Special Color Rendering Indices			
Test Voltage (V)	120.0	R1	81	R9	5
Frequency (Hz)	60	R2	89	R10	75
CCT (K)	4967	R3	95	R11	79
Duv	0.0036	R4	80	R12	54
Chromaticity (x, y)	x=0.3468 y=0.3601	R5	81	R13	83
Chromaticity (u', v')	u(u')=0.2093 v'=0.4890	R6	85	R14	97
Color Rendering Index (CRI)	83	R7	86	R15	75
R9	5	R8	66	--	--
Rf	83		--		--
Rg	94		--		--
Rcs,h1(%)	-13		--		--

Photometric Measurement – Sphere-Spectroradiometer Method:

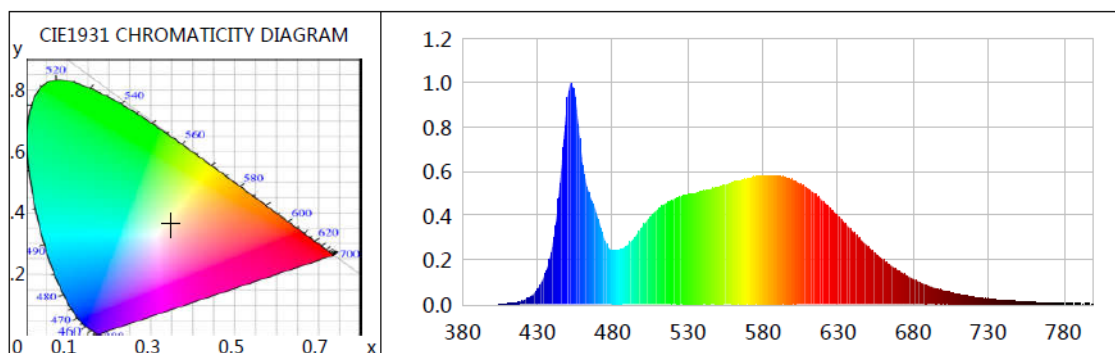
Parameter	Result		Rating	Tolerance
Test Voltage (V)	120.0	277.0	--	--
Frequency (Hz)	60	60	--	--
Total Luminous (lm)	6676.3	6703.8	6750	Comply -10%
Luminous Efficacy (lm/W)	152.60	152.53	150	Comply -3%
Most worst Luminous/Highest Watts	151.91			--



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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	0.0001	0.0231	525	0.4848	88.6828	670	0.1520	27.7986
385	0.0005	0.0937	530	0.4936	90.2862	675	0.1322	24.1734
390	0.0004	0.0674	535	0.5021	91.8427	680	0.1143	20.9147
395	0.0003	0.0592	540	0.5112	93.5055	685	0.0974	17.8071
400	0.0008	0.1428	545	0.5185	94.8400	690	0.0841	15.3908
405	0.0014	0.2535	550	0.5296	96.8774	695	0.0720	13.1743
410	0.0027	0.4993	555	0.5384	98.4826	700	0.0615	11.2544
415	0.0069	1.2549	560	0.5496	100.5201	705	0.0530	9.6987
420	0.0152	2.7849	565	0.5582	102.1044	710	0.0445	8.1441
425	0.0332	6.0655	570	0.5677	103.8396	715	0.0381	6.9625
430	0.0688	12.5773	575	0.5759	105.3446	720	0.0322	5.8962
435	0.1372	25.0940	580	0.5799	106.0655	725	0.0275	5.0335
440	0.2668	48.7930	585	0.5800	106.0927	730	0.0235	4.2920
445	0.5518	100.9313	590	0.5788	105.8657	735	0.0202	3.6896
450	0.9318	170.4320	595	0.5713	104.4957	740	0.0180	3.2995
455	0.9361	171.2238	600	0.5613	102.6656	745	0.0147	2.6951
460	0.6302	115.2680	605	0.5432	99.3633	750	0.0128	2.3403
465	0.4864	88.9677	610	0.5232	95.6994	755	0.0114	2.0882
470	0.3899	71.3185	615	0.4958	90.6937	760	0.0092	1.6812
475	0.2836	51.8658	620	0.4656	85.1545	765	0.0071	1.3035
480	0.2409	44.0663	625	0.4328	79.1717	770	0.0072	1.3181
485	0.2473	45.2362	630	0.3987	72.9229	775	0.0066	1.2119
490	0.2670	48.8381	635	0.3620	66.2219	780	0.0038	0.7041
495	0.3038	55.5766	640	0.3265	59.7190	785	0.0033	0.5986
500	0.3512	64.2430	645	0.2921	53.4261	790	0.0035	0.6462
505	0.3937	72.0026	650	0.2589	47.3499	795	0.0032	0.5913
510	0.4292	78.5075	655	0.2288	41.8407	800	0.0023	0.4155
515	0.4547	83.1676	660	0.1998	36.5539			
520	0.4719	86.3189	665	0.1750	32.0087			

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TM30

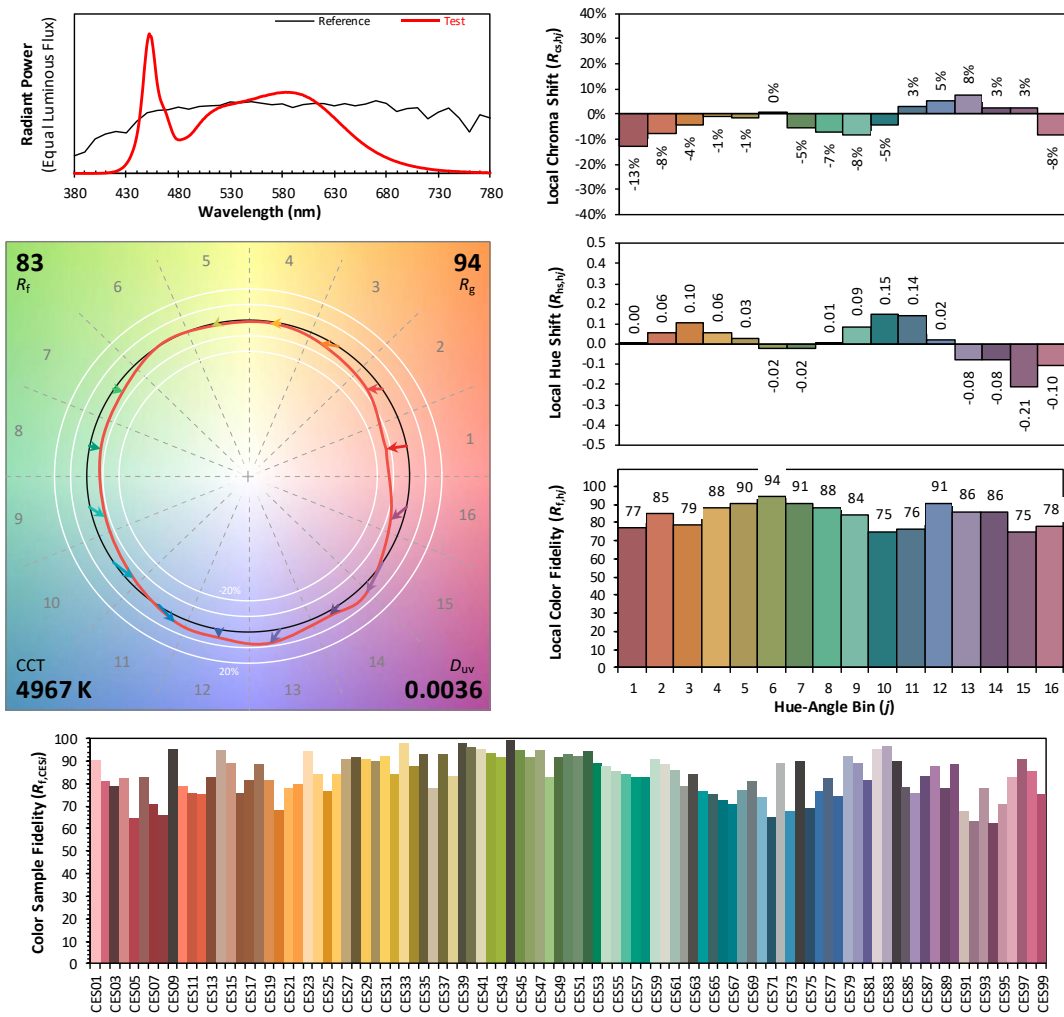
ANSI/IES TM-30-18 Color Rendition Report

Source: L128-XX80RA35000H1

Manufacturer: LEDVANCE LLC

Date: 2020/11/6

Model: LED45HIDRODAREA850MOG



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

x 0.3468
 y 0.3601
 u' 0.2093
 v' 0.4890

CIE 13.3-1995 (CRI)
 R_a 83
 R_g 5

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



Report No.: BLC2010026E-C

Zonal Lumen Tabulation

Zonal Lumen Summary

Zone	Lumens	% Lamp	% Luminaire
0-30	1,839.5	27.6%	27.6%
0-40	3,035.1	45.5%	45.5%
0-60	5,395.3	80.8%	80.8%
60-90	1,198.0	17.9%	17.9%
70-100	456.5	6.8%	6.8%
90-120	62.2	0.9%	0.9%
0-90	6,593.3	98.8%	98.8%
90-180	82.3	1.2%	1.2%
0-180	6,675.6	100%	100%

Lumens Per Zone

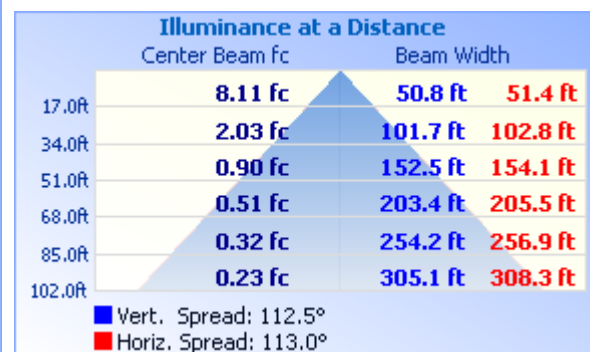
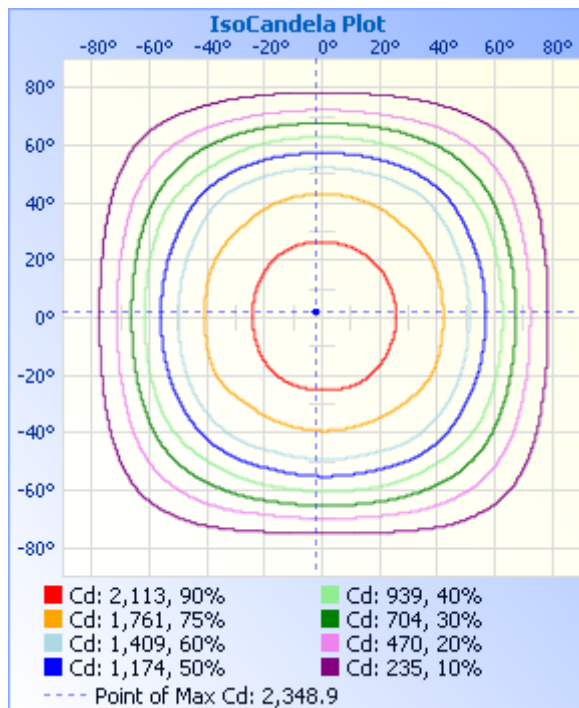
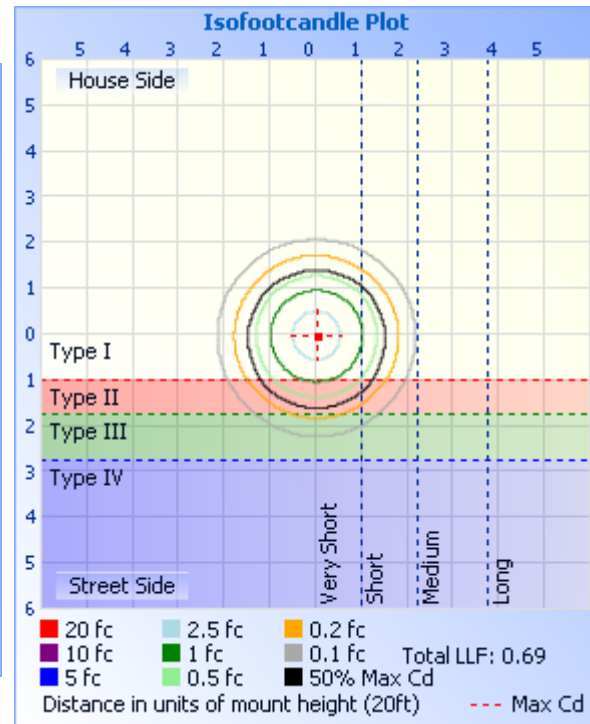
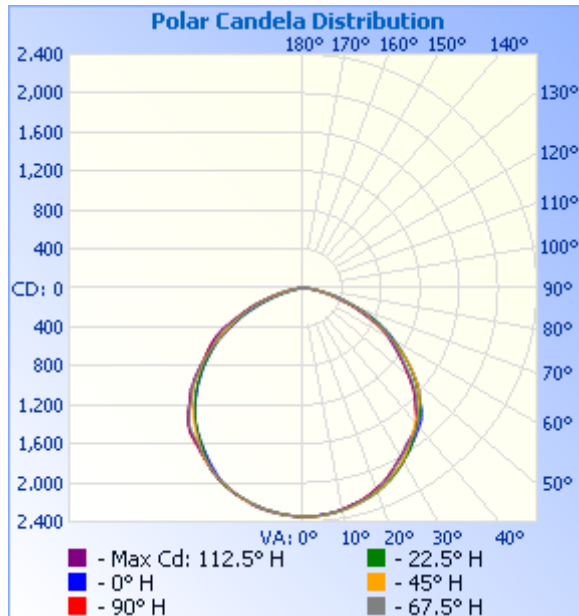
Zone	Lumens	% Total	Zone	Lumens	% Total
0-10	221.9	3.3%	90-100	30.4	0.5%
10-20	639.2	9.6%	100-110	23.6	0.4%
20-30	978.4	14.7%	110-120	8.2	0.1%
30-40	1,195.6	17.9%	120-130	5.3	0.1%
40-50	1,258.8	18.9%	130-140	4.8	0.1%
50-60	1,101.3	16.5%	140-150	4.1	0.1%
60-70	771.8	11.6%	150-160	3.1	0%
70-80	347.5	5.2%	160-170	2.0	0%
80-90	78.6	1.2%	170-180	0.7	0%



Certificate#4810.01

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Photometric Data



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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	2345	2345	2345	2345	2345	2345	2345	2345	2345	2345	2345	2345	2345	2345	2345	2345	2345
1	2345	2346	2348	2346	2344	2349	2346	2344	2344	2344	2343	2342	2339	2345	2345	2344	2345
2	2341	2345	2348	2348	2344	2346	2346	2340	2342	2343	2342	2339	2341	2342	2344	2343	2341
3	2339	2347	2348	2344	2342	2344	2344	2337	2337	2338	2338	2336	2337	2342	2343	2336	2339
4	2338	2344	2347	2342	2338	2342	2341	2334	2334	2334	2335	2333	2336	2339	2340	2333	2338
5	2331	2340	2340	2338	2336	2339	2337	2330	2329	2333	2333	2329	2331	2336	2336	2332	2331
6	2328	2338	2337	2334	2330	2331	2332	2327	2326	2327	2327	2323	2325	2332	2332	2328	2328
7	2325	2334	2331	2328	2326	2329	2326	2322	2316	2321	2321	2318	2320	2326	2325	2324	2325
8	2319	2328	2325	2325	2321	2326	2318	2316	2312	2315	2315	2312	2314	2323	2320	2319	2319
9	2314	2323	2322	2321	2315	2319	2314	2309	2306	2309	2307	2307	2311	2314	2312	2313	2314
10	2307	2318	2317	2315	2304	2313	2308	2304	2299	2303	2301	2300	2305	2311	2307	2307	2307
11	2302	2312	2311	2306	2295	2303	2304	2296	2289	2293	2295	2296	2296	2304	2300	2302	2302
12	2294	2303	2305	2297	2284	2288	2295	2287	2281	2283	2286	2286	2291	2294	2295	2293	2294
13	2286	2293	2297	2286	2277	2278	2287	2277	2276	2275	2279	2278	2280	2286	2289	2288	2286
14	2277	2287	2286	2275	2271	2268	2277	2266	2266	2266	2269	2264	2265	2275	2280	2279	2277
15	2269	2279	2277	2267	2260	2260	2266	2257	2257	2255	2260	2252	2256	2261	2271	2272	2269
16	2261	2267	2265	2258	2247	2251	2250	2246	2247	2243	2248	2242	2245	2249	2262	2260	2261
17	2249	2259	2252	2246	2233	2240	2238	2236	2236	2234	2238	2231	2234	2241	2251	2249	2249
18	2238	2251	2241	2236	2218	2224	2225	2223	2222	2223	2221	2219	2223	2229	2239	2239	2238
19	2227	2238	2230	2217	2202	2205	2214	2213	2212	2209	2206	2206	2208	2217	2221	2228	2227
20	2213	2228	2219	2201	2189	2190	2200	2202	2200	2200	2195	2190	2193	2203	2210	2216	2213
21	2203	2216	2207	2185	2177	2176	2186	2189	2183	2189	2184	2175	2183	2188	2196	2206	2203
22	2187	2202	2195	2169	2161	2161	2171	2175	2165	2175	2169	2160	2169	2173	2183	2190	2187
23	2174	2185	2176	2156	2144	2146	2151	2157	2146	2157	2152	2146	2156	2158	2169	2174	2174
24	2159	2171	2156	2138	2125	2126	2135	2138	2125	2139	2136	2132	2140	2145	2154	2161	2159
25	2146	2155	2139	2120	2102	2108	2116	2117	2102	2120	2119	2115	2122	2125	2136	2142	2146
26	2127	2135	2121	2099	2079	2085	2097	2096	2079	2100	2098	2097	2101	2109	2114	2126	2127
27	2111	2117	2100	2073	2063	2060	2081	2072	2055	2073	2081	2075	2078	2089	2097	2109	2111
28	2092	2098	2084	2051	2046	2035	2060	2049	2032	2050	2061	2052	2062	2064	2082	2091	2092
29	2072	2078	2065	2031	2026	2014	2039	2021	2007	2023	2042	2030	2042	2040	2063	2071	2072

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30	2052	2058	2046	2013	2007	1996	2016	1991	1981	1995	2021	2007	2023	2025	2046	2051	2052
31	2032	2035	2023	1991	1987	1976	1990	1963	1958	1968	1999	1989	2000	2006	2024	2028	2032
32	2012	2017	1998	1971	1968	1955	1959	1938	1932	1941	1972	1970	1979	1986	2001	2007	2012
33	1992	1997	1971	1951	1957	1932	1929	1913	1908	1913	1940	1947	1962	1963	1977	1985	1992
34	1970	1976	1943	1928	1942	1913	1900	1888	1887	1886	1912	1925	1949	1940	1952	1963	1970
35	1949	1952	1920	1917	1938	1899	1870	1861	1857	1863	1884	1907	1935	1924	1926	1940	1949
36	1929	1927	1894	1901	1914	1884	1843	1832	1835	1838	1857	1891	1918	1907	1900	1916	1929
37	1911	1900	1870	1891	1899	1872	1812	1804	1809	1813	1829	1876	1904	1893	1876	1892	1911
38	1892	1874	1845	1873	1873	1849	1784	1777	1785	1781	1801	1860	1882	1878	1852	1867	1892
39	1872	1850	1819	1854	1843	1834	1753	1748	1758	1754	1775	1841	1856	1857	1828	1841	1872
40	1852	1827	1793	1832	1809	1809	1723	1718	1729	1725	1745	1819	1825	1834	1802	1820	1852
41	1836	1806	1774	1800	1767	1778	1700	1687	1697	1694	1718	1785	1792	1802	1775	1800	1836
42	1813	1786	1754	1766	1726	1745	1673	1653	1662	1661	1688	1753	1751	1770	1753	1778	1813
43	1780	1765	1730	1725	1688	1703	1652	1621	1626	1626	1665	1716	1707	1735	1731	1763	1780
44	1748	1739	1709	1684	1664	1662	1624	1586	1587	1595	1639	1674	1667	1689	1707	1736	1748
45	1708	1706	1684	1643	1633	1626	1597	1547	1550	1561	1613	1625	1636	1645	1680	1702	1708
46	1670	1664	1659	1615	1589	1599	1563	1507	1516	1526	1580	1589	1615	1607	1656	1666	1670
47	1632	1624	1630	1581	1551	1564	1528	1470	1479	1489	1548	1561	1576	1582	1627	1622	1632
48	1599	1587	1600	1537	1511	1515	1489	1431	1442	1447	1510	1531	1528	1554	1600	1587	1599
49	1573	1548	1564	1496	1465	1472	1445	1393	1401	1410	1468	1484	1487	1501	1565	1545	1573
50	1528	1515	1526	1449	1419	1428	1402	1353	1365	1372	1422	1434	1443	1465	1520	1510	1528
51	1487	1474	1490	1407	1375	1382	1362	1313	1328	1333	1373	1392	1396	1419	1478	1474	1487
52	1442	1432	1444	1359	1334	1333	1325	1273	1289	1292	1334	1345	1348	1369	1441	1433	1442
53	1398	1390	1401	1313	1296	1285	1282	1230	1249	1245	1295	1294	1303	1320	1398	1388	1398
54	1352	1346	1356	1269	1261	1238	1237	1189	1205	1202	1257	1245	1267	1270	1350	1341	1352
55	1307	1306	1312	1231	1223	1198	1185	1145	1163	1163	1207	1194	1228	1230	1309	1297	1307
56	1257	1260	1260	1194	1190	1160	1134	1107	1120	1125	1161	1155	1195	1189	1261	1255	1257
57	1212	1217	1206	1155	1154	1119	1082	1069	1080	1085	1111	1119	1163	1154	1206	1208	1212
58	1164	1167	1153	1122	1119	1080	1035	1027	1034	1046	1060	1083	1130	1120	1154	1162	1164
59	1126	1118	1103	1087	1085	1041	990	979	977	1007	1009	1046	1097	1087	1104	1118	1126
60	1081	1070	1048	1052	1048	1005	942	931	926	961	955	1012	1063	1054	1047	1068	1081
61	1043	1028	995	1015	999	970	890	882	879	909	900	976	1019	1021	987	1025	1043

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62	1001	988	942	977	948	927	847	836	830	854	856	937	963	978	936	984	1001
63	954	948	892	926	886	882	805	787	784	805	817	889	906	934	888	940	954
64	902	905	848	873	832	831	761	743	734	760	776	837	845	875	841	899	902
65	858	856	803	820	776	777	717	700	688	714	732	782	793	815	801	848	858
66	810	809	764	762	726	723	678	648	639	658	692	727	740	760	764	802	810
67	765	756	727	710	683	666	642	597	587	610	654	674	696	709	724	751	765
68	716	705	687	659	639	619	603	544	535	567	613	621	651	655	684	705	716
69	661	655	638	618	606	577	553	497	484	521	566	580	613	610	637	649	661
70	607	599	581	579	559	539	503	446	439	468	516	540	573	572	583	592	607
71	554	548	532	537	504	499	454	399	389	415	467	503	524	540	529	537	554
72	508	491	480	486	444	446	407	351	345	365	419	452	467	483	475	485	508
73	466	444	438	426	406	395	363	308	307	323	372	401	424	428	436	441	466
74	428	404	401	382	377	348	327	271	264	283	333	360	389	380	396	401	428
75	393	369	353	348	330	318	293	235	222	243	300	328	354	346	358	368	393
76	350	340	307	308	284	284	257	204	187	210	266	291	303	306	305	340	350
77	302	303	270	268	261	242	221	174	149	179	230	249	268	262	270	304	302
78	263	261	237	235	225	217	187	147	119	152	196	222	241	238	242	260	263
79	231	223	209	204	194	186	163	121	91	123	170	194	203	199	212	223	231
80	187	189	187	175	168	161	135	96	67	99	142	164	181	176	185	189	187
81	156	153	159	148	143	140	115	77	46	79	120	144	152	150	159	153	156
82	133	129	134	127	121	119	93	59	30	61	100	120	130	128	136	130	133
83	118	111	111	106	101	100	80	46	19	49	83	102	108	105	112	110	118
84	97	97	92	88	83	83	65	35	11	36	70	88	92	89	92	98	97
85	83	81	78	76	72	69	54	27	7	28	57	74	77	76	78	83	83
86	76	72	71	67	60	57	42	20	5	22	45	61	65	66	70	72	76
87	68	65	59	52	41	41	33	16	4	17	35	45	47	50	59	66	68
88	62	56	48	36	28	27	23	11	4	12	25	29	30	36	51	58	62
89	54	49	42	32	24	23	18	9	3	9	19	25	25	32	43	50	54
90	44	39	37	29	24	22	16	7	3	8	17	23	24	29	38	42	44
91	35	31	32	29	26	22	16	7	3	6	16	23	24	29	32	33	35
92	27	28	32	31	29	25	17	7	3	7	17	26	27	32	33	27	27
93	28	26	35	38	39	33	21	6	3	7	23	34	35	38	35	26	28

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Certificate#4810.01

94	24	26	35	44	47	40	25	7	2	6	27	42	45	43	35	25	24
95	26	28	34	44	48	41	26	7	2	6	27	43	49	43	35	27	26
96	31	29	35	44	46	41	25	5	2	6	26	41	48	44	35	28	31
97	33	29	35	42	46	40	24	6	3	4	26	41	46	43	36	29	33
98	33	28	36	40	45	38	22	5	3	5	23	40	45	41	36	29	33
99	34	28	36	41	43	39	22	4	3	4	24	39	44	41	37	30	34
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101	35	29	31	39	42	35	20	2	2	3	19	36	41	40	32	28	35
102	34	28	29	39	41	34	17	3	3	3	18	36	40	40	30	27	34
103	34	28	29	39	41	34	16	3	2	3	16	32	42	36	28	27	34
104	31	27	26	35	39	31	15	3	3	3	14	30	38	31	27	26	31
105	30	26	24	32	36	29	14	3	3	3	14	29	35	30	24	25	30
106	29	25	21	31	33	27	11	2	2	4	12	27	33	29	21	24	29
107	28	25	20	31	31	27	8	3	3	3	9	27	32	28	19	24	28
108	26	25	17	28	31	25	5	2	3	3	6	26	31	27	18	24	26
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110	11	21	14	22	26	19	2	3	3	3	4	21	28	21	13	20	11
111	7	20	14	18	22	14	2	3	2	2	3	17	25	18	12	19	7
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124	6	13	11	5	2	3	4	4	4	4	4	5	3	4	10	12	6
125	6	12	11	5	2	3	3	4	4	4	4	4	3	4	10	11	6

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126	6	12	11	5	3	3	4	4	4	5	5	5	3	4	10	11	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 *****