

Cooper Lighting Solutions Photometric Lab
1121 Highway 74 South
Peachtree City, GA 30269



Scaled data based on original data using
LM-79-08 Approved Method: Electrical and Photometric Measurements of Solid-State
Lighting Products

Test Report Prepared for

Cooper Lighting Solutions

(formerly Eaton)

Brand: FAIL-SAFE

Report Number: P861216

Luminaire Tested: **8APVTLD-SL3C3 MID POWER 4000K 277V**

Issue Date: 1/11/2023

This test was performed under the Supervised Manufacturer's Testing Program. The results of this test have not been influenced by sources from within Cooper Lighting Solutions or from external interests.



Test Information

Test Method: LM-79-08
Report Number: P861216
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (NTCLR22090026)
Test Lab: INNOVATION CENTER
Issue Date: 1/11/2023
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: FAIL-SAFE
Catalog Number: 8APVTLD-SL3C3 MID POWER 4000K 277V
Description: MID POWER
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER
Luminaire Equipment: Sample No. Condition Description

Summary

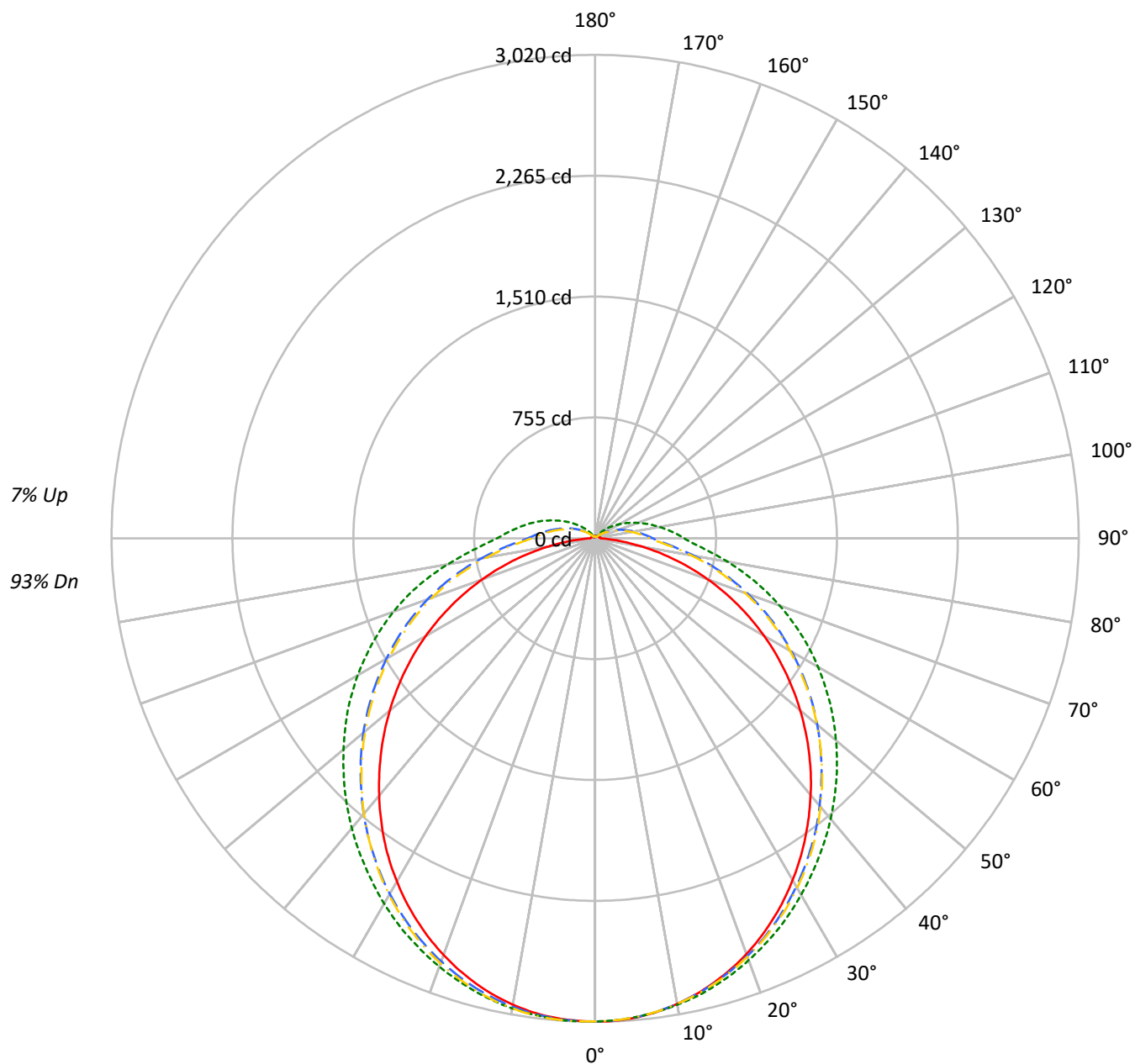
Lumens per Lamp: N/A
Luminaire Lumens: 10250.7 lumens
Efficiency: N/A
Efficacy: 131.4 lumens/watt
Spacing Criteria (0/90/45): 1.22 / 1.28 / 1.38
Luminous Opening: Rectangular w/ Sides (W: 0.33' x L: 8' x H: 0.08')
CIE Type: Direct

Input Watts (W): 78
Input Voltage (V): 277
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT

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Luminous Intensity Polar Plot





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COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

RF	20					20					20					20					20
RC	80					70					50					30					10
RW	70	50	30	10		70	50	30	10		50	30	10		50	30	10		50	30	10
RCR																					
0	117	117	117	117		114	114	114	114		107	107	107		101	101	101		95	95	95
1	105	100	95	91		102	97	92	88		91	88	84		86	83	80		81	79	77
2	95	86	79	73		92	84	77	71		79	73	68		74	70	66		70	66	63
3	86	75	67	60		83	73	65	59		69	62	57		65	59	55		62	57	53
4	79	66	57	50		76	65	56	49		61	54	48		58	51	46		55	49	45
5	72	59	50	43		70	58	49	42		55	47	41		52	45	40		49	43	39
6	67	53	44	37		64	52	43	37		49	42	36		47	40	35		44	39	34
7	62	48	39	33		60	47	38	32		45	37	32		43	36	31		41	35	30
8	58	44	35	29		56	43	35	29		41	33	28		39	32	28		37	31	27
9	54	40	32	26		52	39	31	26		38	30	25		36	29	25		34	29	24
10	50	37	29	24		49	36	29	23		35	28	23		33	27	22		32	26	22

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°	270°
0°	12185	12185	12185	12185
5°	12162	11899	12165	11945
10°	12083	11617	12104	11707
15°	11968	11336	11997	11458
20°	11826	11044	11851	11211
25°	11641	10761	11678	10971
30°	11428	10477	11470	10734
35°	11191	10210	11237	10499
40°	10936	9964	10959	10295
45°	10668	9729	10676	10103
50°	10368	9499	10389	9924
55°	10040	9277	10063	9786
60°	9663	9055	9693	9645
65°	9184	8816	9214	9506
70°	8564	8566	8614	9372
75°	7700	8297	7742	9213
80°	6490	8059	6554	8980
85°	4908	8024	4941	8983



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	285.5	2.8
10°-20°	816.2	8.0
20°-30°	1234.4	12.0
30°-40°	1491.7	14.6
40°-50°	1569.5	15.3
50°-60°	1474.2	14.4
60°-70°	1229.1	12.0
70°-80°	876.6	8.6
80°-90°	513.5	5.0
90°-100°	320.4	3.1
100°-110°	210.6	2.1
110°-120°	124.1	1.2
120°-130°	63.4	0.6
130°-140°	24.6	0.2
140°-150°	8.1	0.1
150°-160°	4.6	0.0
160°-170°	2.9	0.0
170°-180°	1.1	0.0
0°-30°	2336.1	22.8
0°-40°	3827.9	37.3
0°-60°	6871.6	67.0
0°-90°	9490.9	92.6
90°-120°	655.0	6.4
90°-150°	751.2	7.3
90°-180°	760.0	7.4
0°-180°	10250.7	100.0

CANDELA DISTRIBUTION:

	0°	90°	180°	270°	360°	Flux
0°	3019	3019	3019	3019	3019	
5°	3004	3001	3005	3013	3004	285
15°	2872	2894	2879	2926	2872	810
25°	2626	2698	2635	2750	2626	1210
35°	2288	2435	2297	2504	2288	1431
45°	1888	2130	1890	2212	1888	1456
55°	1448	1789	1451	1887	1448	1294
65°	983	1418	986	1529	983	972
75°	513	1028	516	1142	513	544
85°	119	668	119	748	119	134
90°	38	557	32	614	38	23
95°	33	480	27	528	33	26
105°	27	342	23	389	27	29
115°	23	226	21	263	23	22
125°	18	131	16	158	18	16
135°	13	58	12	75	13	10
145°	11	11	9	18	11	7
155°	9	8	9	12	9	4
165°	10	8	12	11	10	3
175°	12	9	14	10	12	1
180°	12	12	12	12	12	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
0°	3018.8	3018.8	3018.8	3018.8	3018.8	3018.8	3018.8	3018.8	3018.8	3018.8	3018.8
1°	3018.8	3018.8	3018.6	3017.6	3017.0	3016.8	3017.4	3017.2	3018.0	3018.8	3018.8
2°	3018.4	3017.8	3016.2	3015.0	3015.0	3013.8	3014.6	3015.0	3016.0	3017.6	3017.6
3°	3014.8	3014.0	3012.1	3010.9	3011.7	3009.7	3011.5	3012.3	3013.6	3015.4	3015.8
4°	3010.1	3009.3	3007.3	3005.4	3007.1	3004.8	3006.1	3007.5	3010.1	3011.3	3013.2
5°	3004.2	3002.4	3001.8	2999.3	3000.8	2998.5	3000.4	3001.4	3005.0	3006.5	3009.1
6°	2996.7	2994.7	2994.5	2992.2	2994.5	2991.4	2993.5	2994.3	2998.7	3000.0	3003.4
7°	2987.8	2985.5	2986.3	2984.1	2987.4	2984.1	2985.7	2985.7	2990.6	2992.8	2997.1
8°	2977.2	2974.8	2976.6	2974.4	2979.0	2975.2	2976.4	2975.4	2980.9	2983.7	2989.6
9°	2966.0	2963.0	2965.0	2965.4	2969.3	2965.4	2965.2	2964.0	2970.1	2973.6	2980.7
10°	2953.4	2950.4	2952.6	2954.3	2959.3	2954.5	2953.6	2952.0	2958.5	2962.2	2971.1
11°	2939.8	2936.8	2939.4	2941.9	2948.4	2942.9	2940.4	2938.2	2944.7	2949.6	2959.7
12°	2924.8	2922.2	2925.0	2929.7	2936.8	2930.9	2927.4	2923.8	2930.1	2935.8	2947.8
13°	2908.9	2906.7	2910.8	2915.7	2924.2	2917.3	2912.8	2907.7	2914.2	2921.3	2934.3
14°	2890.7	2889.0	2894.7	2901.6	2909.8	2902.4	2897.0	2890.3	2897.8	2906.1	2920.3
15°	2872.0	2871.6	2876.7	2887.2	2894.5	2887.4	2881.1	2870.8	2878.9	2888.6	2904.9
16°	2852.7	2852.7	2858.0	2870.4	2878.3	2871.0	2863.4	2850.4	2858.8	2868.5	2888.6
17°	2832.6	2833.2	2838.9	2853.1	2861.6	2853.7	2843.9	2829.7	2838.3	2848.8	2871.2
18°	2810.6	2812.5	2819.0	2834.2	2843.7	2834.8	2823.4	2807.6	2816.1	2827.9	2852.3
19°	2787.7	2790.1	2799.1	2816.1	2824.9	2814.3	2802.9	2785.0	2793.0	2806.0	2832.2
20°	2763.5	2765.7	2777.9	2795.4	2804.9	2794.6	2781.8	2760.9	2769.4	2783.2	2811.8
21°	2738.1	2741.8	2755.2	2775.3	2784.4	2773.5	2759.6	2736.5	2744.4	2759.2	2791.3
22°	2711.3	2715.6	2731.2	2754.2	2763.9	2752.1	2736.5	2712.1	2718.4	2734.5	2769.6
23°	2683.9	2689.2	2706.8	2731.0	2742.0	2730.2	2712.9	2687.7	2691.6	2709.1	2746.4
24°	2655.6	2661.5	2681.0	2708.0	2720.6	2707.2	2688.1	2661.1	2663.4	2682.5	2723.1
25°	2626.4	2633.5	2655.2	2684.7	2697.9	2683.9	2662.5	2633.9	2634.7	2655.2	2698.7
26°	2596.5	2604.9	2627.4	2660.3	2674.9	2659.1	2636.3	2604.4	2604.4	2627.6	2673.5
27°	2565.4	2574.8	2599.8	2635.1	2649.9	2634.1	2610.1	2575.6	2574.2	2598.4	2647.3
28°	2532.7	2543.7	2571.1	2609.3	2624.8	2608.1	2580.9	2544.3	2541.9	2568.5	2620.9
29°	2500.4	2511.8	2541.9	2582.5	2599.0	2581.7	2552.0	2512.8	2509.6	2537.8	2592.7
30°	2466.7	2479.1	2512.2	2554.5	2572.3	2554.9	2522.6	2481.3	2475.7	2505.9	2564.8
31°	2432.2	2445.8	2481.5	2526.6	2546.1	2527.1	2492.3	2447.8	2441.9	2474.8	2535.4
32°	2397.0	2411.5	2450.5	2498.4	2518.9	2498.6	2461.0	2413.9	2407.0	2442.1	2506.7
33°	2361.3	2376.9	2418.0	2469.4	2491.3	2468.9	2429.1	2379.0	2371.2	2408.2	2475.3
34°	2324.1	2342.0	2386.3	2439.7	2462.7	2439.7	2397.4	2343.8	2334.7	2375.3	2445.0
35°	2287.7	2305.8	2353.2	2410.6	2434.6	2410.6	2364.5	2307.3	2297.1	2340.4	2413.1
36°	2249.8	2269.7	2319.6	2379.8	2406.0	2379.6	2330.4	2270.5	2258.1	2305.0	2381.8
37°	2211.2	2232.3	2287.3	2349.5	2377.5	2349.5	2296.7	2233.1	2218.5	2269.1	2348.9
38°	2172.6	2194.9	2252.0	2319.8	2347.9	2319.2	2261.8	2193.7	2178.9	2232.7	2315.6
39°	2132.8	2156.5	2216.9	2289.4	2318.8	2287.7	2226.0	2154.1	2139.7	2195.3	2282.5
40°	2093.6	2117.3	2180.5	2258.3	2287.7	2255.7	2189.6	2114.7	2098.0	2157.5	2247.7
41°	2054.7	2078.7	2145.3	2225.4	2256.7	2224.4	2152.9	2075.5	2057.6	2120.2	2213.8
42°	2013.5	2039.1	2108.8	2192.9	2225.8	2191.7	2115.7	2035.7	2016.0	2080.6	2178.9



TEST NUMBER: P861216

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
45°	1888.3	1919.0	1998.1	2094.4	2130.3	2092.1	2002.3	1912.0	1889.7	1961.4	2071.6
46°	1845.6	1878.6	1961.4	2060.2	2098.2	2057.8	1964.0	1870.8	1847.6	1920.5	2035.7
47°	1802.1	1836.4	1924.1	2025.1	2063.9	2023.1	1924.8	1829.0	1804.7	1880.4	1999.3
48°	1758.8	1794.5	1886.7	1991.2	2031.0	1989.1	1886.4	1786.8	1761.8	1840.1	1962.9
49°	1714.8	1751.7	1848.7	1956.3	1997.7	1954.1	1847.0	1743.6	1718.1	1798.0	1925.6
50°	1671.6	1709.6	1810.1	1921.9	1963.3	1918.0	1807.7	1700.1	1674.9	1756.5	1889.5
51°	1626.6	1667.1	1772.0	1885.8	1929.6	1883.2	1768.4	1657.9	1631.0	1714.2	1852.5
52°	1582.5	1623.4	1733.1	1850.9	1894.8	1846.8	1728.0	1613.9	1586.1	1671.6	1814.2
53°	1538.1	1580.6	1694.5	1815.2	1859.6	1810.3	1687.9	1570.6	1541.5	1629.0	1776.4
54°	1493.0	1537.0	1655.5	1778.0	1824.0	1773.5	1647.7	1526.9	1496.4	1587.0	1737.9
55°	1447.9	1493.3	1615.8	1742.2	1788.9	1736.5	1607.4	1482.5	1451.2	1543.7	1699.2
56°	1402.6	1450.1	1576.0	1705.0	1752.6	1699.8	1566.7	1438.4	1405.8	1500.2	1661.2
57°	1357.0	1406.1	1536.3	1667.7	1716.3	1662.3	1526.3	1394.1	1360.2	1457.5	1622.3
58°	1311.4	1361.6	1496.9	1628.9	1681.5	1624.4	1485.7	1349.8	1314.0	1413.6	1583.6
59°	1265.2	1318.0	1457.4	1590.9	1644.1	1586.1	1445.9	1304.7	1268.2	1370.5	1543.8
60°	1218.6	1274.5	1417.6	1552.4	1607.3	1547.4	1405.0	1261.0	1222.4	1327.5	1505.5
61°	1171.2	1230.0	1377.6	1513.0	1570.7	1509.1	1364.3	1215.4	1175.1	1283.9	1467.0
62°	1124.1	1186.6	1337.7	1475.8	1532.4	1470.2	1323.7	1170.3	1127.8	1240.9	1427.4
63°	1077.2	1142.9	1297.8	1436.7	1495.5	1431.3	1283.7	1125.8	1080.7	1197.8	1388.7
64°	1030.8	1098.9	1258.5	1399.7	1457.2	1392.7	1243.0	1081.8	1034.0	1153.6	1349.8
65°	983.0	1055.6	1218.7	1362.3	1417.9	1352.9	1201.8	1037.4	986.3	1110.2	1309.7
66°	935.4	1011.4	1178.0	1322.8	1381.1	1314.3	1161.3	993.4	939.0	1067.8	1271.5
67°	888.2	967.9	1136.9	1284.7	1341.0	1275.1	1119.9	949.6	891.6	1024.0	1231.9
68°	840.8	923.8	1095.5	1244.8	1303.6	1235.9	1079.2	905.8	844.8	980.5	1192.1
69°	794.1	880.4	1055.6	1206.2	1264.5	1196.6	1037.6	861.8	797.0	936.9	1152.3
70°	746.4	837.8	1015.1	1166.0	1224.4	1157.6	996.4	819.0	750.8	894.2	1112.8
71°	699.1	794.3	975.2	1125.6	1185.4	1117.4	956.0	775.3	702.4	851.3	1072.4
72°	652.6	752.3	935.2	1084.9	1146.7	1078.8	916.1	732.9	656.2	808.9	1033.3
73°	605.5	709.7	896.0	1044.0	1107.1	1038.8	876.5	690.4	608.4	767.6	993.5
74°	558.9	669.7	856.9	1004.1	1067.6	999.4	836.8	648.2	562.1	725.4	953.7
75°	512.9	628.2	817.5	963.9	1028.4	961.0	797.5	606.6	515.7	684.1	914.2
76°	468.0	587.9	777.6	925.2	988.8	922.4	758.4	565.5	470.1	644.2	874.5
77°	423.3	547.6	739.0	887.4	951.0	884.3	720.3	526.5	426.0	604.9	835.4
78°	379.4	508.3	699.5	849.7	912.5	845.9	681.3	486.7	382.0	566.0	796.1
79°	336.7	470.4	662.7	812.5	874.7	808.3	644.3	450.0	338.8	527.1	757.3
80°	295.7	434.1	625.9	775.4	838.2	772.0	608.2	412.4	298.6	489.2	721.1
81°	255.3	398.4	589.6	739.1	800.7	735.0	571.5	376.4	259.3	452.2	683.1
82°	217.0	364.3	555.1	703.6	766.9	700.3	538.0	341.8	221.1	415.9	647.1
83°	181.0	332.2	521.3	669.7	731.2	666.8	503.7	308.5	184.3	381.3	612.3
84°	148.5	300.7	490.1	637.2	699.3	634.9	473.4	277.6	150.6	347.5	579.5
85°	118.6	272.6	462.6	606.3	668.3	604.8	444.0	248.9	119.4	316.1	547.7
86°	93.1	246.5	436.8	579.3	639.9	576.2	417.1	222.6	92.1	286.7	516.5
87°	71.3	224.2	411.8	554.0	613.0	550.5	392.4	200.2	70.3	260.8	487.2



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
90°	38.0	177.0	360.2	496.9	557.0	495.7	341.5	152.5	31.9	203.0	421.4
91°	36.1	167.7	347.8	482.6	540.4	479.6	327.9	143.3	29.7	191.0	405.1
92°	35.1	158.5	335.4	468.2	525.0	465.9	316.2	134.7	28.7	180.3	390.5
93°	34.1	149.5	323.4	453.7	510.0	451.0	304.8	126.4	28.0	170.3	376.3
94°	33.3	141.3	311.6	440.4	493.8	436.8	293.5	118.6	27.5	160.5	362.4
95°	32.7	133.0	299.5	426.7	479.9	423.4	281.9	111.2	26.6	150.9	348.9
96°	31.9	125.3	288.4	414.4	464.8	408.9	270.9	104.0	26.0	142.2	335.3
97°	31.3	118.0	277.1	401.0	451.2	395.9	261.1	97.4	25.8	133.5	322.0
98°	30.5	111.3	266.8	388.3	436.1	382.8	250.7	91.0	25.7	125.5	309.8
99°	30.1	104.6	256.1	375.6	422.0	370.3	240.4	85.2	25.5	117.3	297.4
100°	29.7	98.4	245.4	362.9	407.7	357.8	229.6	79.3	25.3	110.2	285.4
101°	29.2	92.3	235.0	350.6	394.9	345.0	219.8	74.3	25.2	103.2	273.9
102°	28.8	87.3	225.1	338.1	380.4	331.8	210.3	69.0	24.8	96.7	262.9
103°	28.4	81.7	215.4	325.3	368.3	319.9	201.5	64.2	24.0	90.2	252.1
104°	27.8	76.5	205.9	313.3	354.2	307.3	192.2	59.8	23.6	84.5	241.0
105°	27.2	72.0	197.1	301.7	342.2	296.4	183.7	55.7	23.2	78.9	230.4
106°	26.6	67.3	188.0	289.7	329.2	284.9	174.7	51.3	23.2	73.3	220.2
107°	26.0	63.3	179.7	278.5	316.6	274.6	166.2	47.4	22.6	68.2	209.8
108°	25.4	58.9	171.2	267.7	304.7	263.9	157.1	43.5	22.2	63.7	200.1
109°	25.0	54.7	163.1	256.6	292.9	253.4	149.0	40.3	22.1	59.1	190.4
110°	24.6	50.7	155.1	245.8	280.7	242.4	141.2	36.3	22.0	54.3	181.0
111°	24.2	46.9	147.1	235.6	270.1	232.0	133.9	33.2	21.9	50.0	172.2
112°	23.6	43.0	139.6	224.9	258.6	221.0	126.6	30.2	21.7	45.8	163.5
113°	23.6	39.6	132.0	214.9	247.8	210.9	119.5	27.1	21.6	41.5	155.0
114°	23.0	36.5	124.8	205.1	236.8	200.4	112.3	24.7	21.4	37.9	146.6
115°	22.6	33.2	117.6	195.2	225.9	190.2	105.6	22.5	20.6	34.3	138.5
116°	22.2	30.6	111.0	185.8	216.0	180.2	98.9	20.6	19.8	30.8	130.5
117°	21.8	28.2	104.5	176.7	205.0	171.6	92.8	19.8	19.8	27.6	123.0
118°	21.2	25.8	97.8	167.9	195.8	162.9	86.4	19.2	19.0	24.7	115.1
119°	20.8	24.0	91.7	159.1	185.9	154.4	80.3	18.6	18.8	22.0	107.9
120°	20.4	23.4	85.4	150.8	176.4	146.0	74.4	18.4	18.4	19.7	101.2
121°	19.8	23.0	79.5	142.2	166.9	137.5	68.3	18.0	18.4	18.4	94.3
122°	19.2	22.6	73.6	133.9	158.5	129.4	63.5	17.8	18.2	18.0	87.7
123°	18.6	21.8	68.1	126.3	148.9	121.1	57.8	17.0	17.3	17.7	80.7
124°	17.7	21.8	63.0	118.3	140.6	113.6	52.7	16.6	16.7	17.1	74.8
125°	17.5	21.2	57.5	110.7	131.2	105.9	47.6	16.4	16.2	16.8	68.5
126°	16.9	20.4	52.3	103.1	123.7	98.4	42.6	15.8	15.7	16.3	62.9
127°	16.5	20.2	47.3	96.1	115.4	91.1	38.1	15.6	15.1	15.9	57.4
128°	16.1	19.8	42.6	89.0	107.5	84.0	34.0	15.2	14.6	15.5	51.5
129°	15.5	19.2	37.9	82.0	99.8	76.8	29.1	15.0	14.0	15.3	46.2
130°	15.5	18.8	33.4	75.3	92.6	70.6	25.5	15.0	13.5	15.1	41.2
131°	14.9	18.5	29.5	68.9	84.4	64.3	21.8	13.8	13.1	14.9	35.8
132°	14.5	17.9	25.5	62.8	78.2	58.1	18.5	13.4	12.5	13.9	31.3



TEST NUMBER: P861216

CATALOG NUMBER: 8APVTLD-SL3C3 MID POWER 4000K 277V

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
135°	13.3	16.3	17.1	45.2	57.7	41.1	13.0	12.3	11.7	13.1	18.7
136°	13.1	15.9	16.7	40.0	51.4	35.7	12.5	12.3	10.5	12.8	15.0
137°	12.5	15.5	15.9	35.0	45.5	31.0	12.1	12.4	10.1	12.5	13.1
138°	12.3	15.1	15.7	30.4	39.6	26.4	11.7	12.3	9.7	12.2	12.6
139°	12.1	14.7	14.9	25.4	34.0	21.9	11.2	11.1	9.7	12.0	12.0
140°	11.9	14.1	14.7	21.3	28.7	18.0	10.8	10.5	9.1	11.7	11.8
141°	11.3	13.9	14.5	17.6	23.7	14.3	10.4	10.3	9.0	11.3	11.4
142°	11.2	13.5	14.1	15.0	19.0	11.8	10.0	9.9	9.0	11.0	10.6
143°	11.0	12.9	13.6	14.2	14.8	11.4	9.9	9.5	8.9	10.6	10.0
144°	10.8	12.7	13.2	14.0	12.0	11.0	9.9	9.1	8.9	10.3	9.6
145°	10.7	12.5	12.9	14.0	10.8	10.8	9.8	9.0	8.9	10.1	9.4
146°	10.5	11.9	12.6	13.6	10.2	10.4	9.7	8.9	8.9	10.0	8.8
147°	10.3	11.5	12.2	13.2	10.0	10.0	9.7	8.9	8.9	9.8	8.6
148°	10.1	11.1	11.9	13.0	9.6	9.8	9.6	8.8	8.9	9.6	8.6
149°	9.7	11.1	11.5	12.8	9.4	9.6	9.0	8.7	8.9	9.6	8.7
150°	9.7	10.9	11.2	12.5	9.0	9.5	8.6	8.7	8.9	9.6	8.7
151°	9.5	10.5	11.4	12.3	9.0	9.3	8.6	8.8	8.9	9.6	8.7
152°	9.3	10.3	11.2	12.0	9.2	9.1	8.6	8.8	8.9	9.6	8.8
153°	9.1	10.1	11.0	11.9	9.0	9.0	8.5	8.9	8.9	9.6	8.8
154°	9.1	10.1	10.8	11.7	8.2	8.8	8.5	8.9	8.9	9.6	8.9
155°	9.1	10.1	11.0	11.5	8.2	8.6	8.5	9.0	8.9	9.6	8.9
156°	9.0	10.1	11.0	11.4	8.2	8.2	8.5	9.0	8.9	9.6	9.0
157°	9.0	10.1	10.9	11.2	8.2	8.4	8.5	9.1	8.9	9.5	9.0
158°	9.0	10.1	10.9	11.0	8.1	8.4	8.4	9.1	9.2	9.5	9.0
159°	9.1	10.1	10.9	10.8	8.1	8.4	8.4	9.2	9.6	9.5	9.1
160°	9.3	10.1	10.9	10.7	8.1	8.4	8.4	9.2	9.9	9.5	9.1
161°	9.4	10.1	10.9	10.5	8.2	8.4	8.4	9.3	10.2	9.9	9.2
162°	9.6	10.1	10.9	10.4	8.2	8.4	8.8	9.3	10.5	10.3	10.2
163°	9.7	10.1	10.9	10.2	8.3	8.4	9.0	10.1	10.9	11.1	10.8
164°	9.9	10.1	10.9	10.1	8.3	8.4	9.0	10.5	11.5	11.3	11.2
165°	10.1	10.1	10.9	10.1	8.4	8.4	9.2	10.7	12.3	11.5	11.4
166°	10.7	10.1	10.9	10.0	8.4	8.4	9.6	11.1	12.9	12.1	11.6
167°	11.7	10.3	10.9	9.9	8.4	8.4	9.4	11.5	13.5	12.1	12.2
168°	11.9	10.9	10.8	9.9	8.5	8.4	9.5	11.3	13.7	12.1	12.9
169°	12.1	11.9	10.8	9.8	8.5	8.4	9.6	11.5	13.9	12.1	13.2
170°	11.9	12.1	10.8	9.8	8.5	8.4	9.7	11.5	14.1	12.2	13.1
171°	12.3	12.1	10.8	9.7	8.6	8.4	9.8	11.7	14.3	12.2	13.1
172°	12.3	12.3	10.8	9.7	8.6	8.4	9.9	11.8	14.5	12.2	13.1
173°	12.2	12.7	10.8	9.6	8.6	8.4	10.0	11.9	14.4	12.2	13.1
174°	12.2	13.1	10.8	9.6	8.6	8.8	10.4	12.0	14.4	12.2	13.0
175°	12.2	12.9	10.8	9.5	8.8	8.6	10.2	12.1	14.3	12.3	13.0
176°	12.1	12.9	10.8	9.5	9.2	9.2	10.2	12.2	14.3	12.3	13.0
177°	12.1	12.9	11.4	9.4	9.4	9.4	10.2	12.3	14.3	12.3	13.0

TEST NUMBER: P861216
CATALOG NUMBER: 8APVTLD-SL3C3 MID POWER 4000K 277V

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
180°	12.3	12.3	12.3	12.3	12.3	12.3	12.3	12.3	12.3	12.3	12.3



TEST NUMBER: P861216

CATALOG NUMBER: 8APVTLD-SL3C3 MID POWER 4000K 277V

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
0°	3018.8	3018.8	3018.8	3018.8	3018.8	3018.8
1°	3018.6	3019.1	3019.5	3019.1	3019.1	3018.8
2°	3018.6	3019.3	3019.9	3019.5	3018.9	3018.4
3°	3017.4	3019.5	3019.9	3019.5	3015.8	3014.8
4°	3014.2	3017.2	3018.2	3017.8	3011.5	3010.1
5°	3010.9	3012.6	3014.8	3014.6	3005.8	3004.2
6°	3006.0	3007.9	3010.9	3010.7	2998.7	2996.7
7°	2999.6	3002.0	3005.2	3005.6	2990.4	2987.8
8°	2993.5	2996.5	2998.7	2999.1	2981.3	2977.2
9°	2986.1	2989.4	2991.2	2990.4	2970.3	2966.0
10°	2977.6	2982.1	2982.3	2981.1	2957.9	2953.4
11°	2968.1	2973.3	2972.7	2971.1	2944.5	2939.8
12°	2957.7	2962.2	2962.8	2959.5	2930.5	2924.8
13°	2946.5	2951.2	2952.0	2946.3	2914.4	2908.9
14°	2933.9	2938.6	2940.2	2932.1	2898.0	2890.7
15°	2921.5	2925.6	2927.8	2917.3	2880.5	2872.0
16°	2907.1	2910.8	2913.4	2900.8	2861.4	2852.7
17°	2892.5	2896.6	2899.2	2883.6	2842.3	2832.6
18°	2876.0	2880.5	2882.3	2865.1	2822.4	2810.6
19°	2858.6	2864.7	2865.1	2845.4	2800.5	2787.7
20°	2840.1	2847.4	2846.2	2825.1	2777.5	2763.5
21°	2819.8	2829.3	2826.9	2805.1	2753.6	2738.1
22°	2799.7	2810.6	2807.4	2782.8	2728.4	2711.3
23°	2778.7	2790.5	2787.1	2758.8	2702.4	2683.9
24°	2757.8	2770.6	2765.5	2734.5	2676.2	2655.6
25°	2736.1	2750.5	2742.8	2710.1	2648.3	2626.4
26°	2714.7	2730.4	2720.2	2684.3	2619.9	2596.5
27°	2691.0	2707.4	2695.4	2657.7	2589.8	2565.4
28°	2666.6	2684.3	2671.7	2629.8	2559.6	2532.7
29°	2642.0	2659.7	2645.7	2601.6	2528.1	2500.4
30°	2617.2	2635.3	2621.3	2572.1	2496.8	2466.7
31°	2591.6	2610.1	2595.3	2542.3	2464.3	2432.2
32°	2564.4	2583.7	2568.9	2512.4	2430.2	2397.0
33°	2537.4	2557.1	2541.7	2480.9	2396.4	2361.3
34°	2510.2	2531.3	2515.1	2448.8	2361.7	2324.1
35°	2481.7	2503.7	2486.0	2416.9	2326.1	2287.7
36°	2452.3	2476.9	2457.4	2382.8	2290.0	2249.8
37°	2422.6	2449.0	2428.7	2349.7	2253.6	2211.2
38°	2393.4	2421.8	2398.5	2315.6	2216.0	2172.6
39°	2363.7	2393.2	2368.2	2281.3	2178.7	2132.8
40°	2333.3	2363.7	2337.7	2245.3	2140.1	2093.6
41°	2304.2	2334.7	2306.6	2210.4	2101.5	2054.7
42°	2273.5	2304.2	2274.8	2173.8	2062.7	2013.5



TEST NUMBER: P861216

CATALOG NUMBER: 8APVTLD-SL3C3 MID POWER 4000K 277V

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
45°	2179.7	2212.2	2177.0	2063.7	1943.6	1888.3
46°	2147.2	2180.1	2143.5	2026.3	1902.9	1845.6
47°	2114.5	2147.6	2111.2	1988.5	1862.6	1802.1
48°	2081.8	2116.3	2076.3	1950.2	1821.5	1758.8
49°	2048.3	2083.4	2042.6	1912.5	1779.8	1714.8
50°	2014.9	2051.1	2007.8	1874.3	1738.0	1671.6
51°	1981.2	2018.4	1972.3	1835.6	1695.1	1626.6
52°	1946.2	1985.1	1937.5	1796.9	1653.5	1582.5
53°	1912.0	1953.5	1902.4	1757.8	1610.7	1538.1
54°	1876.9	1919.9	1866.3	1718.8	1568.1	1493.0
55°	1841.6	1887.0	1829.5	1680.1	1524.9	1447.9
56°	1805.4	1852.6	1792.4	1640.5	1481.9	1402.6
57°	1770.1	1818.5	1756.4	1601.3	1438.1	1357.0
58°	1733.3	1782.6	1717.9	1561.1	1395.2	1311.4
59°	1696.8	1747.3	1681.7	1521.5	1351.0	1265.2
60°	1660.0	1712.0	1643.8	1482.1	1307.0	1218.6
61°	1622.4	1675.0	1607.3	1442.4	1262.7	1171.2
62°	1584.8	1639.4	1569.1	1402.6	1218.7	1124.1
63°	1547.4	1602.6	1531.4	1362.8	1174.3	1077.2
64°	1509.5	1565.9	1493.0	1322.6	1130.5	1030.8
65°	1472.1	1528.9	1454.7	1282.9	1085.7	983.0
66°	1434.7	1490.8	1416.5	1243.4	1041.8	935.4
67°	1395.9	1454.1	1377.9	1203.7	998.3	888.2
68°	1357.6	1414.8	1339.2	1163.5	954.7	840.8
69°	1318.9	1378.1	1300.5	1122.4	910.6	794.1
70°	1280.4	1339.5	1262.1	1082.6	867.8	746.4
71°	1240.4	1300.8	1223.2	1041.9	824.1	699.1
72°	1201.3	1262.4	1184.6	1001.9	781.7	652.6
73°	1161.8	1223.0	1145.6	960.9	739.0	605.5
74°	1122.4	1183.7	1106.1	921.1	696.2	558.9
75°	1084.7	1141.9	1067.7	880.6	654.2	512.9
76°	1046.3	1100.6	1029.1	841.2	613.3	468.0
77°	1008.7	1058.0	990.3	801.4	572.6	423.3
78°	970.2	1015.0	952.3	762.1	532.3	379.4
79°	931.3	974.7	911.9	724.2	492.5	336.7
80°	893.2	934.0	875.0	687.1	454.0	295.7
81°	856.3	893.8	837.0	651.3	416.7	255.3
82°	819.2	855.1	799.4	616.0	381.5	217.0
83°	783.9	817.5	763.3	582.4	347.4	181.0
84°	750.0	782.9	728.0	549.2	315.2	148.5
85°	716.8	748.2	694.4	517.7	284.9	118.6
86°	685.1	717.7	663.2	488.3	257.9	93.1
87°	655.3	686.9	633.6	461.1	232.3	71.3



TEST NUMBER: P861216

CATALOG NUMBER: 8APVTLD-SL3C3 MID POWER 4000K 277V

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
90°	584.0	613.9	562.2	394.9	176.1	38.0
91°	564.6	593.8	541.9	379.4	165.5	36.1
92°	547.8	576.6	525.5	365.2	155.8	35.1
93°	531.8	560.1	509.7	351.4	147.0	34.1
94°	515.6	544.2	493.4	337.3	137.9	33.3
95°	499.3	528.3	478.3	324.1	129.7	32.7
96°	483.0	513.3	463.0	312.4	121.8	31.9
97°	467.7	498.2	448.1	301.3	113.8	31.3
98°	452.1	482.8	434.2	289.6	106.4	30.5
99°	436.3	469.8	420.3	277.5	99.8	30.1
100°	422.0	455.3	405.5	266.4	93.7	29.7
101°	407.5	441.0	391.2	255.1	87.6	29.2
102°	392.2	428.2	377.1	244.5	81.8	28.8
103°	379.3	414.7	363.2	234.0	76.9	28.4
104°	364.2	401.2	350.4	223.3	71.7	27.8
105°	351.1	388.7	338.5	213.3	66.8	27.2
106°	337.2	376.1	327.2	203.2	62.5	26.6
107°	323.8	363.0	315.6	193.7	58.4	26.0
108°	310.8	350.0	302.8	184.2	54.3	25.4
109°	298.7	336.9	290.5	175.4	50.3	25.0
110°	286.2	323.3	278.8	166.8	46.4	24.6
111°	274.4	310.6	266.9	158.1	42.9	24.2
112°	262.8	298.0	255.5	149.8	39.6	23.6
113°	251.8	285.7	244.0	141.8	36.4	23.6
114°	240.5	273.9	233.1	134.0	33.4	23.0
115°	229.6	262.7	222.8	126.8	30.7	22.6
116°	219.0	251.0	212.5	119.3	28.1	22.2
117°	208.8	239.4	202.0	112.2	26.1	21.8
118°	197.9	228.6	191.7	105.4	24.9	21.2
119°	188.3	217.7	182.3	98.8	24.9	20.8
120°	178.8	207.6	172.7	92.3	24.3	20.4
121°	168.7	196.9	163.8	85.9	23.7	19.8
122°	160.0	187.0	154.8	80.0	23.3	19.2
123°	150.6	177.1	145.7	73.7	22.9	18.6
124°	141.9	167.5	137.1	68.0	22.5	17.7
125°	133.4	158.3	129.0	62.9	22.0	17.5
126°	124.6	149.0	120.7	57.1	21.7	16.9
127°	116.9	139.7	112.4	52.0	21.0	16.5
128°	108.4	131.1	104.7	46.9	20.6	16.1
129°	100.7	122.4	96.9	42.1	20.4	15.5
130°	93.0	114.2	89.2	37.2	19.6	15.5
131°	85.4	105.6	82.0	33.4	19.0	14.9
132°	78.4	97.7	74.9	29.0	18.6	14.5



TEST NUMBER: P861216

CATALOG NUMBER: 8APVTLD-SL3C3 MID POWER 4000K 277V

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
135°	57.8	75.0	55.8	19.2	17.2	13.3
136°	51.5	67.9	49.9	18.4	17.0	13.1
137°	45.5	61.6	44.0	17.6	16.2	12.5
138°	39.5	55.3	38.7	17.2	15.8	12.3
139°	33.7	48.8	33.5	16.8	15.4	12.1
140°	28.2	42.7	28.5	16.2	14.8	11.9
141°	23.2	37.1	23.7	16.0	14.4	11.3
142°	18.3	31.6	19.7	15.4	14.0	11.2
143°	14.2	26.3	16.7	15.0	13.6	11.0
144°	12.2	21.4	16.1	14.6	13.4	10.8
145°	11.8	17.5	15.5	14.0	12.8	10.7
146°	11.6	15.5	15.1	13.8	12.7	10.5
147°	11.4	14.9	15.1	13.2	11.9	10.3
148°	10.6	14.7	14.7	12.8	12.1	10.1
149°	10.2	14.5	14.5	12.4	11.7	9.7
150°	10.0	14.1	14.0	12.2	11.3	9.7
151°	9.8	13.7	13.7	11.8	11.3	9.5
152°	9.0	13.5	13.0	11.6	10.7	9.3
153°	9.2	12.9	12.8	11.4	10.7	9.1
154°	8.8	12.9	12.8	11.4	10.7	9.1
155°	8.7	12.3	12.3	11.4	10.7	9.1
156°	8.6	12.1	12.2	11.4	10.7	9.0
157°	8.5	11.9	11.8	11.4	10.7	9.0
158°	8.4	11.7	11.6	11.5	10.8	9.0
159°	8.3	11.5	11.4	11.5	10.8	9.1
160°	8.2	11.3	11.6	11.5	10.8	9.3
161°	8.4	11.3	11.4	11.5	10.8	9.4
162°	8.6	11.1	11.0	11.5	10.8	9.6
163°	9.0	11.0	11.0	11.5	10.9	9.7
164°	9.4	10.9	10.9	11.5	11.5	9.9
165°	9.8	10.8	10.8	11.5	11.7	10.1
166°	9.8	10.7	10.8	11.5	12.1	10.7
167°	10.0	10.5	10.7	11.6	11.9	11.7
168°	10.6	10.3	10.6	11.6	12.1	11.9
169°	10.4	10.2	10.6	11.6	12.3	12.1
170°	10.8	10.1	10.5	11.6	12.5	11.9
171°	10.8	9.9	10.5	11.6	12.8	12.3
172°	10.9	9.8	10.4	11.7	13.0	12.3
173°	10.9	9.7	10.4	11.7	13.2	12.2
174°	11.0	9.6	10.4	11.7	13.6	12.2
175°	11.1	9.5	10.3	11.8	13.6	12.2
176°	11.1	9.4	10.3	11.8	13.6	12.1
177°	11.2	9.2	10.2	12.0	14.0	12.1



TEST NUMBER: P861216
CATALOG NUMBER: 8APVTLD-SL3C3 MID POWER 4000K 277V

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
180°	12.3	12.3	12.3	12.3	12.3	12.3



Report Generated By 670246072 / DESKTOP-50001EG





— 0°-180° - - 45°-225° - - - 90°-270° - · - 135°-315°







43°	1971.9	2000.3	2071.6	2159.8	2194.1	2158.4	2078.5	1994.8	1973.9	2040.7	2143.1
44°	1930.0	1960.5	2035.5	2126.9	2162.4	2125.4	2040.7	1954.0	1932.0	2001.5	2107.4



88°	53.3	204.4	391.3	532.8	592.1	530.2	373.1	181.0	52.6	238.8	461.4
89°	42.8	188.0	373.5	512.9	572.3	510.5	355.6	164.5	39.9	219.4	440.1



133°	13.9	17.5	22.1	56.8	70.5	52.2	15.6	13.0	12.1	13.5	26.9
134°	13.7	17.1	18.8	51.1	64.4	46.6	13.4	12.8	12.1	13.3	22.5



178°	12.3	12.9	11.2	9.4	9.4	9.2	10.2	12.3	13.9	12.3	13.0
179°	12.3	12.9	11.2	9.4	9.4	9.2	10.2	12.3	13.9	12.3	13.0





43°	2242.2	2274.3	2243.1	2138.0	2023.1	1971.9
44°	2211.2	2242.2	2210.2	2101.3	1983.4	1930.0



88°	629.2	659.6	606.9	436.5	210.7	53.3
89°	603.7	635.9	583.1	414.9	190.7	42.8



133°	71.0	89.9	68.2	25.2	18.4	13.9
134°	64.6	82.6	62.3	21.8	17.6	13.7



178°	11.2	9.2	10.2	12.2	13.8	12.3
179°	11.2	9.2	10.2	12.4	13.8	12.3



LM-79-2019: Approved Method: Electrical and Photometric Measurements of Solid-
State Lighting Products

Report Prepared for

Cooper Lighting Solutions

(formerly Eaton)

METALUX

Report Number: SP1-2210-820-12

Test Date: 11/10/2022

Luminaire Tested: 4APVTLD-SL3C3

Data in this report applies to families of products including 4APVTLD-SL3C3.

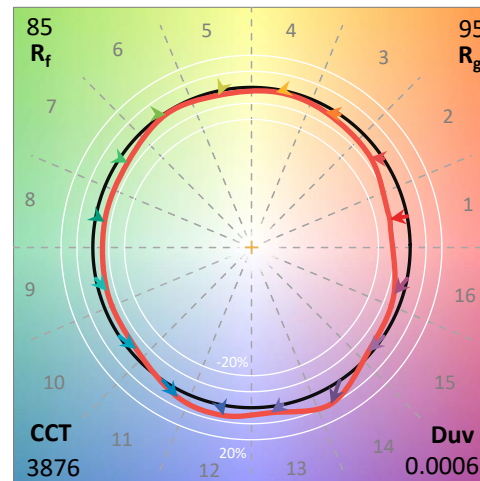
Test Information

Test Method: LM-79-2019
 Report Number: SP1-2210-820-12
 Test Lab: COOPER LIGHTING SOLUTIONS
 Photometer: SP1 - 76IN SPHERE
 Measurement Geometry: 4π
 Issue Date: 11/10/2022
 Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
 Product Line: METALUX
 Catalog Number: **4APVTLD-SL3C3**
 Description: METALUX

0.1699(@277V) [AT MAX POWER AND 5000K]

Spectral Parameters

CCT (K):	3876	CRI (Ra):	85.1		
CIE u':	0.2271	R1:	84.0	R9:	16.2
CIE v':	0.5046	R2:	92.4	R10:	81.7
Duv:	0.0006	R3:	96.5	R11:	82.8
CIE x:	0.3864	R4:	83.1	R12:	65.5
CIE y:	0.3817	R5:	83.9	R13:	86.4
CIE z:	0.2319	R6:	89.2	R14:	98.7
Peak Wavelength (nm):	453	R7:	86.0		
Dominant Wavelength (nm):	579	R8:	66.1		
Purity:	30.7				
Rf:	85.4				
Rg:	94.7				



Test Conditions

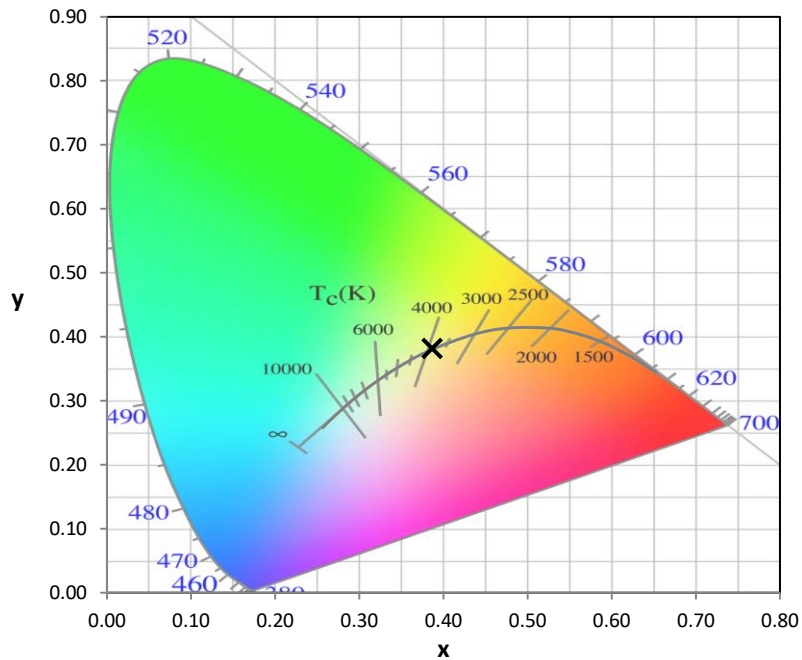
Stabilization Time: 51M
 Operation Time: 12H
 Room Temperature (°C) / RH%: 24.0/40%
 Sphere Temperature (°C): 24.6

REPORT NUMBER: SP1-2210-820-12

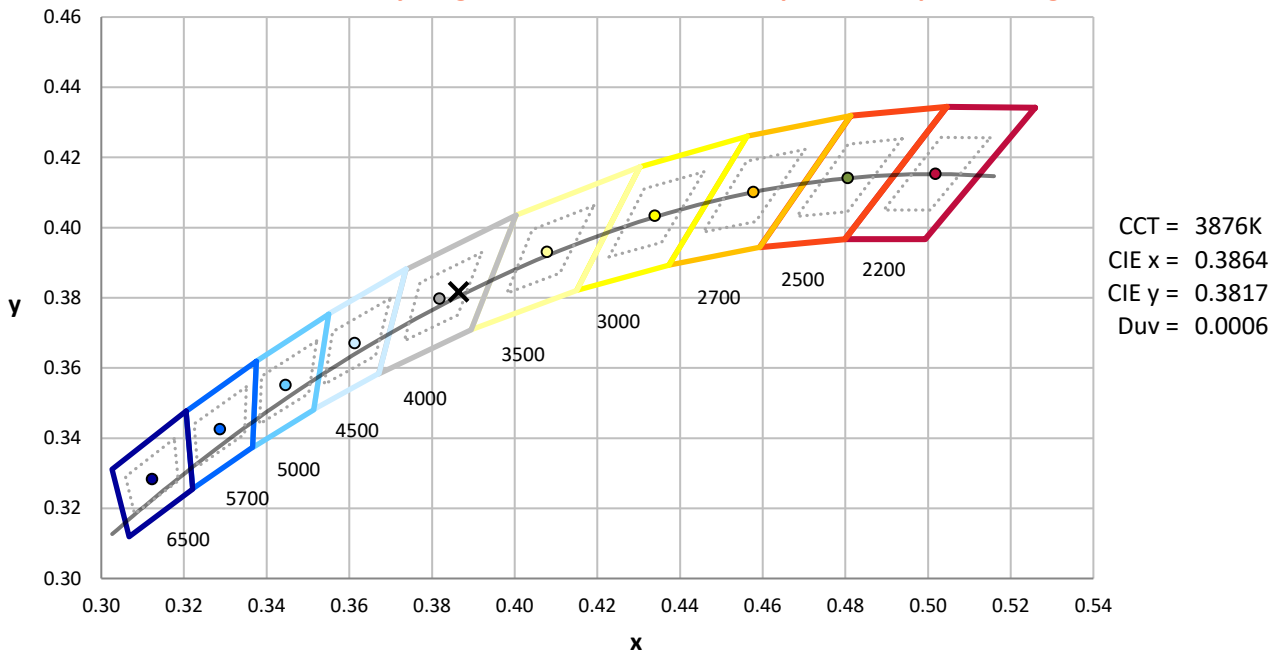
Measurement and Test Equipment			
Instrument	Identification Number	Calibration Date	Calibration Due Date
Photometer	76INCH SPHERE IN0058	8/8/2022	2/8/2023
Power Meter	XITRON 2801 IN0071	11/29/2021	11/29/2022
AC Power Source	CHROMA 61603 IN0063	11/29/2021	11/29/2022
DC Power Source	AGILENT E3634A IN0208	11/29/2021	11/29/2022
Sphere Thermometer	ONSET IN0085	11/29/2021	11/29/2022
Room Thermometer	ONSET IN0046	11/29/2021	11/29/2022

REPORT NUMBER: SP1-2210-820-12

CIE 1931 Chromaticity Diagram



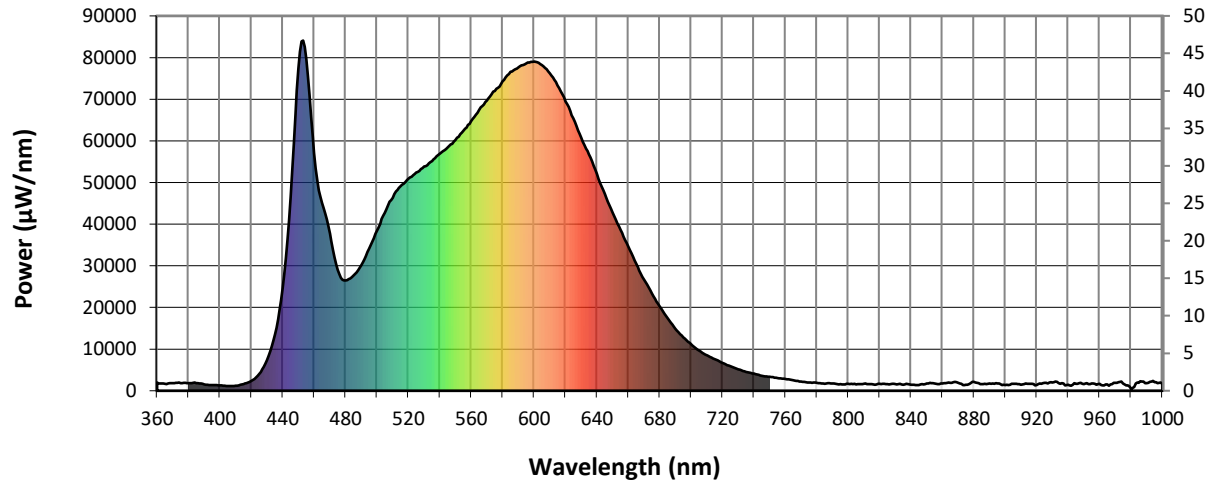
CIE 1931 Chromaticity Diagram with 2017 ANSI 7-Step and 4-Step Quadrangles



Point lies inside the ANSI 4000K 4-step quadrangle

REPORT NUMBER: SP1-2210-820-12

Photopic Flux vs. Wavelength

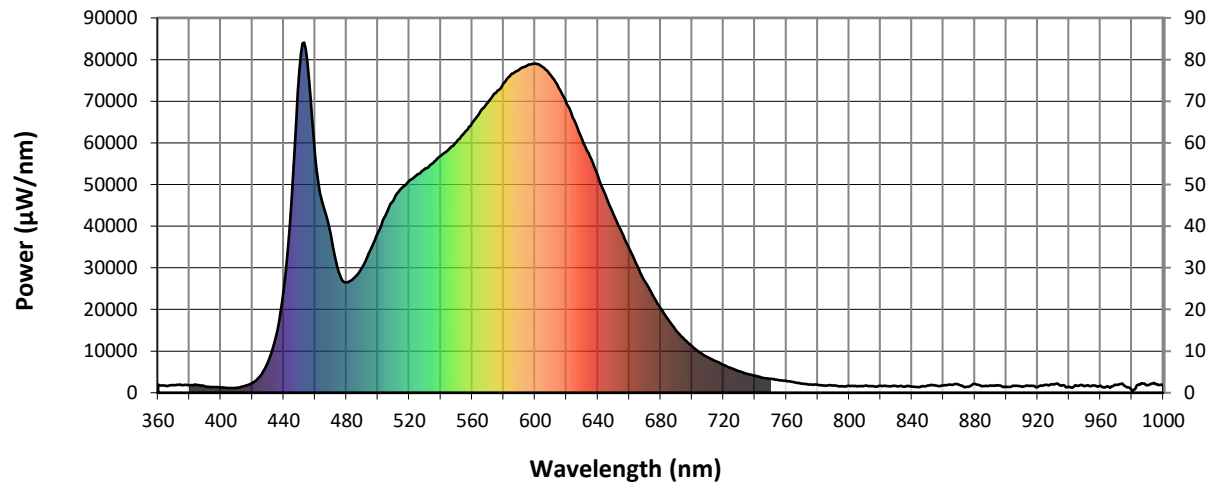


#####

λ (nm)	Power (μW/nm)	Lumens (φ/nm)	λ (nm)	Power (μW/nm)	Lumens (φ/nm)	λ (nm)	Power (μW/nm)	Lumens (φ/nm)	λ (nm)	Power (μW/nm)	Lumens (φ/nm)	λ (nm)	Power (μW/nm)	Lumens (φ/nm)
360	1947	NR	490	30170	NR	620	69440	NR	750	3331	NR	880	2112	NR
365	1674	NR	495	34118	NR	625	65415	NR	755	3046	NR	885	1588	NR
370	1805	NR	500	38463	NR	630	60773	NR	760	2809	NR	890	1766	NR
375	1851	NR	505	42724	NR	635	56746	NR	765	2547	NR	895	1779	NR
380	1831	NR	510	46310	NR	640	52045	NR	770	2181	NR	900	1381	NR
385	1846	NR	515	49050	NR	645	47246	NR	775	1960	NR	905	1679	NR
390	1484	NR	520	50932	NR	650	42768	NR	780	1873	NR	910	1446	NR
395	1354	NR	525	52361	NR	655	38663	NR	785	1666	NR	915	1701	NR
400	1264	NR	530	53844	NR	660	34619	NR	790	1747	NR	920	1395	NR
405	1149	NR	535	55134	NR	665	30494	NR	795	1563	NR	925	1892	NR
410	1194	NR	540	56888	NR	670	26724	NR	800	1631	NR	930	1940	NR
415	1603	NR	545	58422	NR	675	23315	NR	805	1543	NR	935	1652	NR
420	2323	NR	550	60239	NR	680	20244	NR	810	1652	NR	940	1415	NR
425	4025	NR	555	62462	NR	685	17427	NR	815	1601	NR	945	1691	NR
430	7375	NR	560	64721	NR	690	14880	NR	820	1646	NR	950	1630	NR
435	13538	NR	565	67424	NR	695	12818	NR	825	1575	NR	955	1775	NR
440	24620	NR	570	69684	NR	700	11158	NR	830	1604	NR	960	1691	NR
445	46624	NR	575	71962	NR	705	9622	NR	835	1470	NR	965	1501	NR
450	77306	NR	580	74253	NR	710	8505	NR	840	1426	NR	970	1931	NR
455	79561	NR	585	76606	NR	715	7565	NR	845	1386	NR	975	1781	NR
460	57072	NR	590	77663	NR	720	6660	NR	850	1770	NR	980	542	NR
465	45082	NR	595	78567	NR	725	5882	NR	855	1753	NR	985	1915	NR
470	37690	NR	600	79045	NR	730	5159	NR	860	1742	NR	990	1791	NR
475	29009	NR	605	78162	NR	735	4513	NR	865	1894	NR	995	2066	NR
480	26519	NR	610	76190	NR	740	4095	NR	870	1926	NR	1000	1597	NR
485	27641	NR	615	73307	NR	745	3585	NR	875	1426	NR			

REPORT NUMBER: SP1-2210-820-12

Scotopic Flux vs. Wavelength



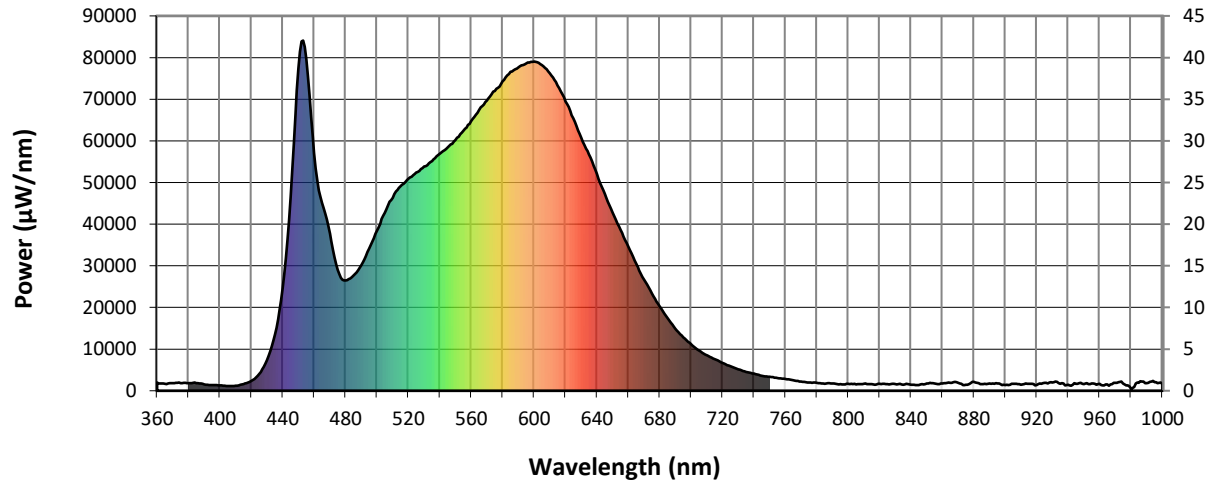
Scotopic Lumens: 7601.5

S/P: 1.7

λ (nm)	Power (μW/nm)	Lumens (φ/nm)	λ (nm)	Power (μW/nm)	Lumens (φ/nm)	λ (nm)	Power (μW/nm)	Lumens (φ/nm)	λ (nm)	Power (μW/nm)	Lumens (φ/nm)	λ (nm)	Power (μW/nm)	Lumens (φ/nm)
360	1947	NR	490	30170	NR	620	69440	NR	750	3331	NR	880	2112	NR
365	1674	NR	495	34118	NR	625	65415	NR	755	3046	NR	885	1588	NR
370	1805	NR	500	38463	NR	630	60773	NR	760	2809	NR	890	1766	NR
375	1851	NR	505	42724	NR	635	56746	NR	765	2547	NR	895	1779	NR
380	1831	NR	510	46310	NR	640	52045	NR	770	2181	NR	900	1381	NR
385	1846	NR	515	49050	NR	645	47246	NR	775	1960	NR	905	1679	NR
390	1484	NR	520	50932	NR	650	42768	NR	780	1873	NR	910	1446	NR
395	1354	NR	525	52361	NR	655	38663	NR	785	1666	NR	915	1701	NR
400	1264	NR	530	53844	NR	660	34619	NR	790	1747	NR	920	1395	NR
405	1149	NR	535	55134	NR	665	30494	NR	795	1563	NR	925	1892	NR
410	1194	NR	540	56888	NR	670	26724	NR	800	1631	NR	930	1940	NR
415	1603	NR	545	58422	NR	675	23315	NR	805	1543	NR	935	1652	NR
420	2323	NR	550	60239	NR	680	20244	NR	810	1652	NR	940	1415	NR
425	4025	NR	555	62462	NR	685	17427	NR	815	1601	NR	945	1691	NR
430	7375	NR	560	64721	NR	690	14880	NR	820	1646	NR	950	1630	NR
435	13538	NR	565	67424	NR	695	12818	NR	825	1575	NR	955	1775	NR
440	24620	NR	570	69684	NR	700	11158	NR	830	1604	NR	960	1691	NR
445	46624	NR	575	71962	NR	705	9622	NR	835	1470	NR	965	1501	NR
450	77306	NR	580	74253	NR	710	8505	NR	840	1426	NR	970	1931	NR
455	79561	NR	585	76606	NR	715	7565	NR	845	1386	NR	975	1781	NR
460	57072	NR	590	77663	NR	720	6660	NR	850	1770	NR	980	542	NR
465	45082	NR	595	78567	NR	725	5882	NR	855	1753	NR	985	1915	NR
470	37690	NR	600	79045	NR	730	5159	NR	860	1742	NR	990	1791	NR
475	29009	NR	605	78162	NR	735	4513	NR	865	1894	NR	995	2066	NR
480	26519	NR	610	76190	NR	740	4095	NR	870	1926	NR	1000	1597	NR
485	27641	NR	615	73307	NR	745	3585	NR	875	1426	NR			

REPORT NUMBER: SP1-2210-820-12

Melanopic Flux vs. Wavelength



Melanopic Lumens: 3097.7

S/P: 0.69

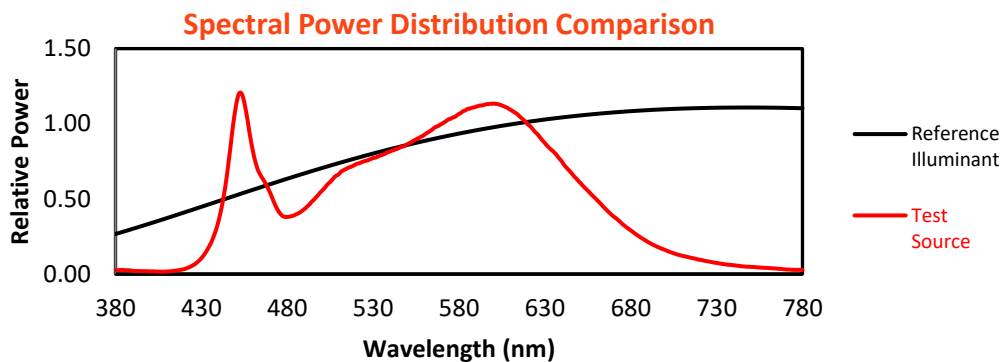
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360	1947	NR	490	30170	NR	620	69440	NR	750	3331	NR	880	2112	NR
365	1674	NR	495	34118	NR	625	65415	NR	755	3046	NR	885	1588	NR
370	1805	NR	500	38463	NR	630	60773	NR	760	2809	NR	890	1766	NR
375	1851	NR	505	42724	NR	635	56746	NR	765	2547	NR	895	1779	NR
380	1831	NR	510	46310	NR	640	52045	NR	770	2181	NR	900	1381	NR
385	1846	NR	515	49050	NR	645	47246	NR	775	1960	NR	905	1679	NR
390	1484	NR	520	50932	NR	650	42768	NR	780	1873	NR	910	1446	NR
395	1354	NR	525	52361	NR	655	38663	NR	785	1666	NR	915	1701	NR
400	1264	NR	530	53844	NR	660	34619	NR	790	1747	NR	920	1395	NR
405	1149	NR	535	55134	NR	665	30494	NR	795	1563	NR	925	1892	NR
410	1194	NR	540	56888	NR	670	26724	NR	800	1631	NR	930	1940	NR
415	1603	NR	545	58422	NR	675	23315	NR	805	1543	NR	935	1652	NR
420	2323	NR	550	60239	NR	680	20244	NR	810	1652	NR	940	1415	NR
425	4025	NR	555	62462	NR	685	17427	NR	815	1601	NR	945	1691	NR
430	7375	NR	560	64721	NR	690	14880	NR	820	1646	NR	950	1630	NR
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445	46624	NR	575	71962	NR	705	9622	NR	835	1470	NR	965	1501	NR
450	77306	NR	580	74253	NR	710	8505	NR	840	1426	NR	970	1931	NR
455	79561	NR	585	76606	NR	715	7565	NR	845	1386	NR	975	1781	NR
460	57072	NR	590	77663	NR	720	6660	NR	850	1770	NR	980	542	NR
465	45082	NR	595	78567	NR	725	5882	NR	855	1753	NR	985	1915	NR
470	37690	NR	600	79045	NR	730	5159	NR	860	1742	NR	990	1791	NR
475	29009	NR	605	78162	NR	735	4513	NR	865	1894	NR	995	2066	NR
480	26519	NR	610	76190	NR	740	4095	NR	870	1926	NR	1000	1597	NR
485	27641	NR	615	73307	NR	745	3585	NR	875	1426	NR			

REPORT NUMBER: SP1-2210-820-12

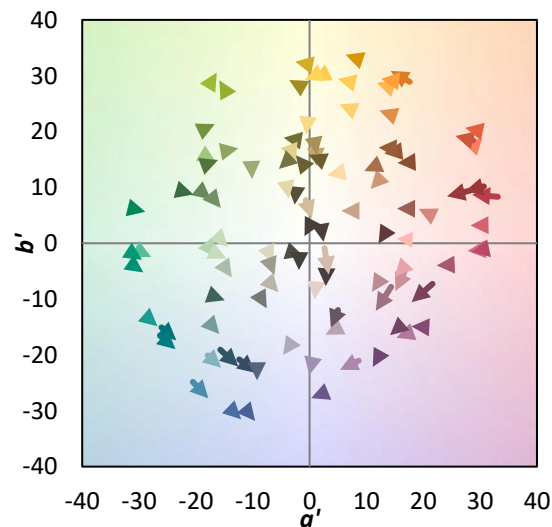
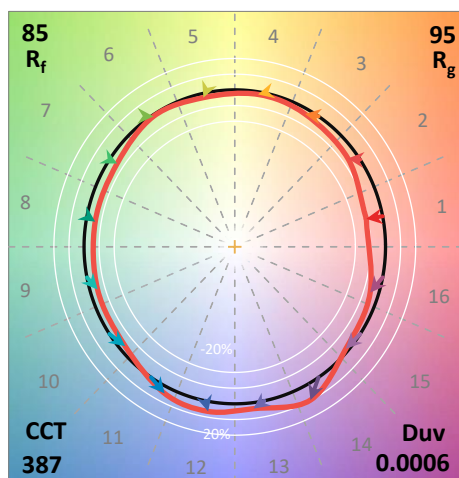
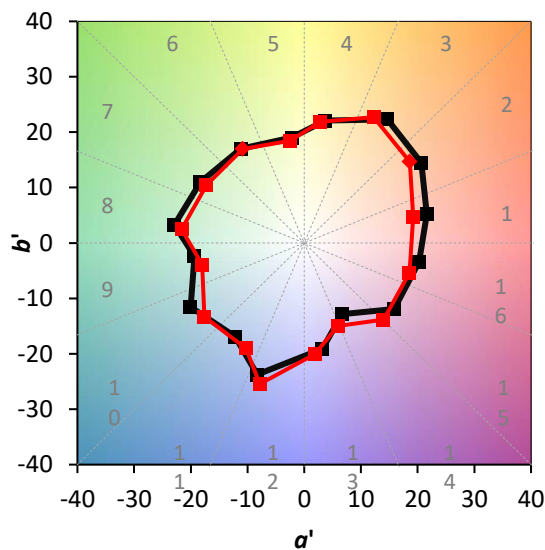
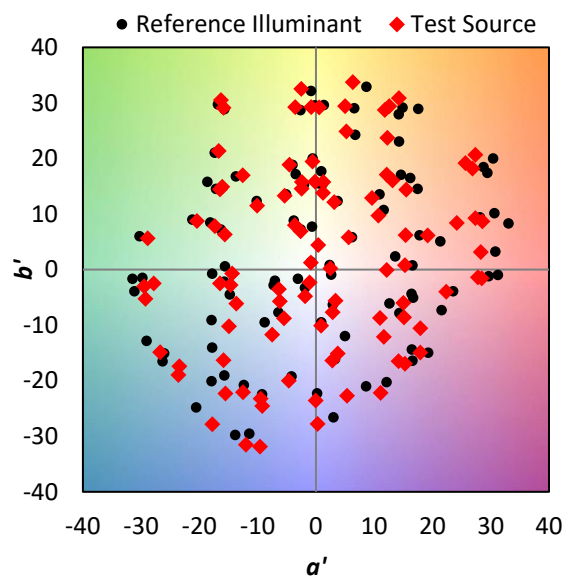
TM-30-18

Summary

$R_f = 85.4$
 $R_g = 94.7$
 CIE $R_a = 85.1$
 $R_g = 16.2$



Color Vector Graphics

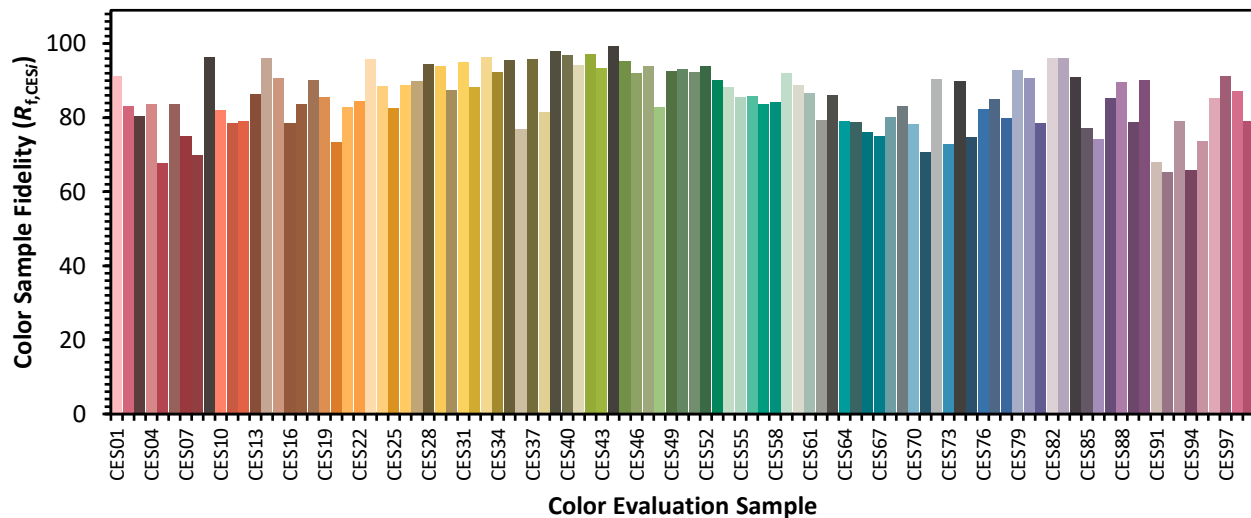


REPORT NUMBER: SP1-2210-820-12

TM-30-18

Individual Sample Fidelity Index ($R_{f,i}$)

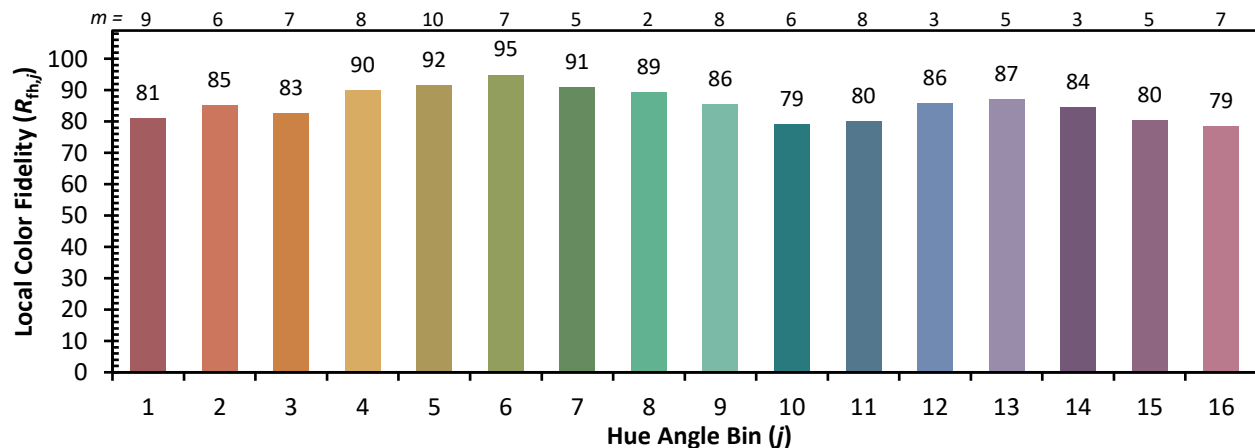
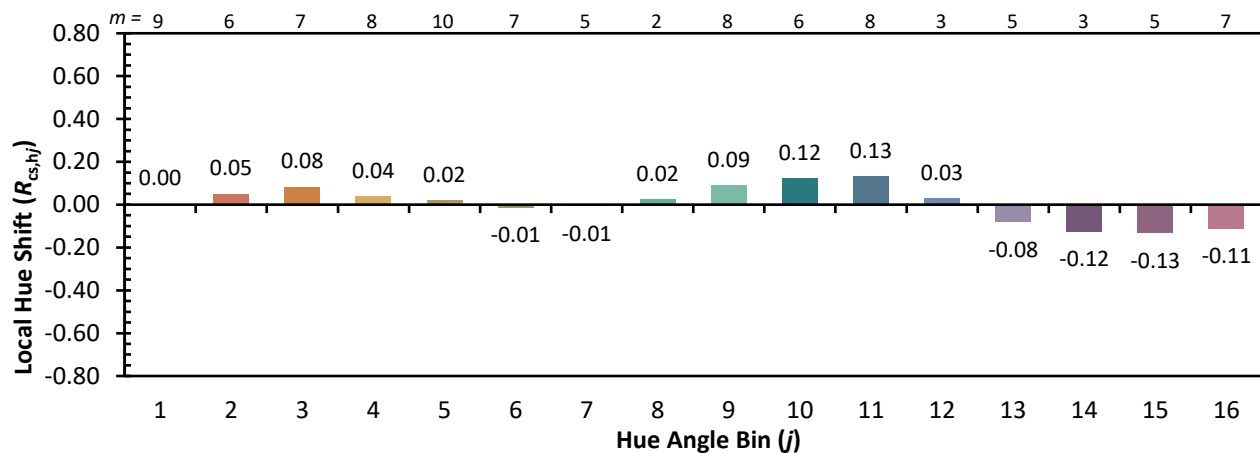
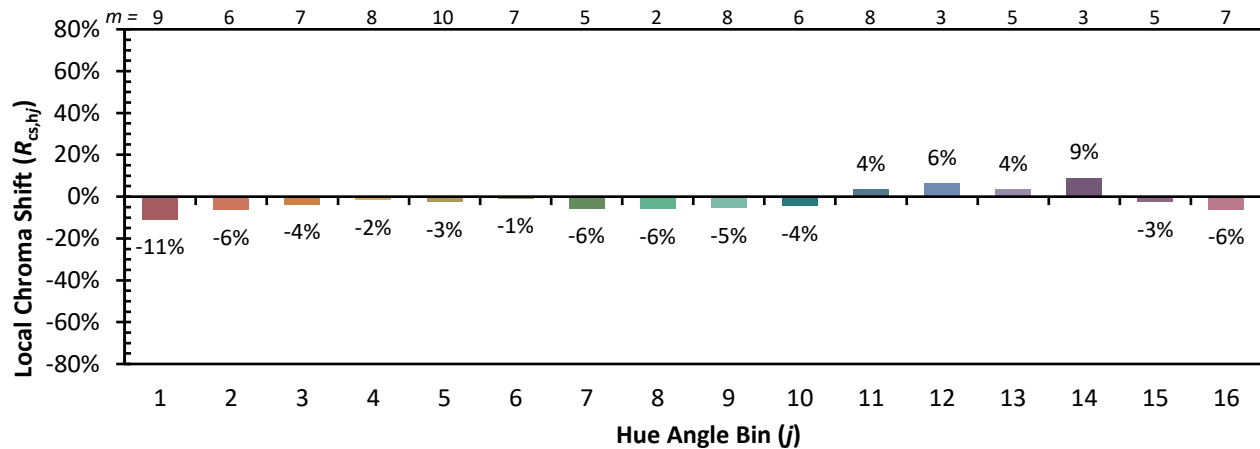
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CES02 = 61	CES27 = 90	CES52 = 94	CES77 = 85
CES03 = 31	CES28 = 94	CES53 = 90	CES78 = 80
CES04 = 69	CES29 = 94	CES54 = 88	CES79 = 93
CES05 = 48	CES30 = 87	CES55 = 85	CES80 = 91
CES06 = 51	CES31 = 95	CES56 = 86	CES81 = 78
CES07 = 41	CES32 = 88	CES57 = 84	CES82 = 96
CES08 = 40	CES33 = 96	CES58 = 84	CES83 = 96
CES09 = 29	CES34 = 92	CES59 = 92	CES84 = 91
CES10 = 74	CES35 = 95	CES60 = 89	CES85 = 77
CES11 = 57	CES36 = 77	CES61 = 87	CES86 = 74
CES12 = 63	CES37 = 96	CES62 = 79	CES87 = 85
CES13 = 43	CES38 = 81	CES63 = 86	CES88 = 90
CES14 = 74	CES39 = 98	CES64 = 79	CES89 = 79
CES15 = 71	CES40 = 97	CES65 = 79	CES90 = 90
CES16 = 47	CES41 = 94	CES66 = 76	CES91 = 68
CES17 = 49	CES42 = 97	CES67 = 75	CES92 = 65
CES18 = 56	CES43 = 93	CES68 = 80	CES93 = 79
CES19 = 71	CES44 = 99	CES69 = 83	CES94 = 66
CES20 = 65	CES45 = 95	CES70 = 78	CES95 = 74
CES21 = 86	CES46 = 92	CES71 = 71	CES96 = 85
CES22 = 78	CES47 = 94	CES72 = 90	CES97 = 91
CES23 = 91	CES48 = 83	CES73 = 73	CES98 = 87
CES24 = 90	CES49 = 92	CES74 = 90	CES99 = 79
CES25 = 71	CES50 = 93	CES75 = 75	



REPORT NUMBER: SP1-2210-820-12

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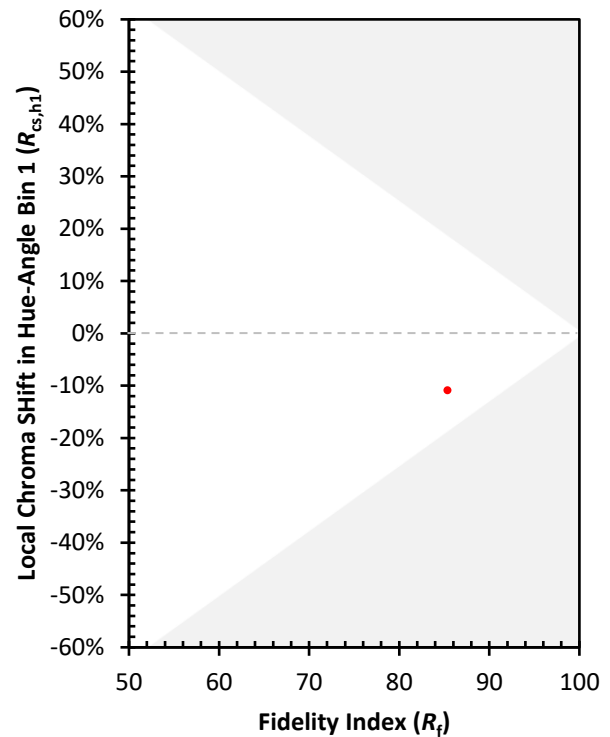
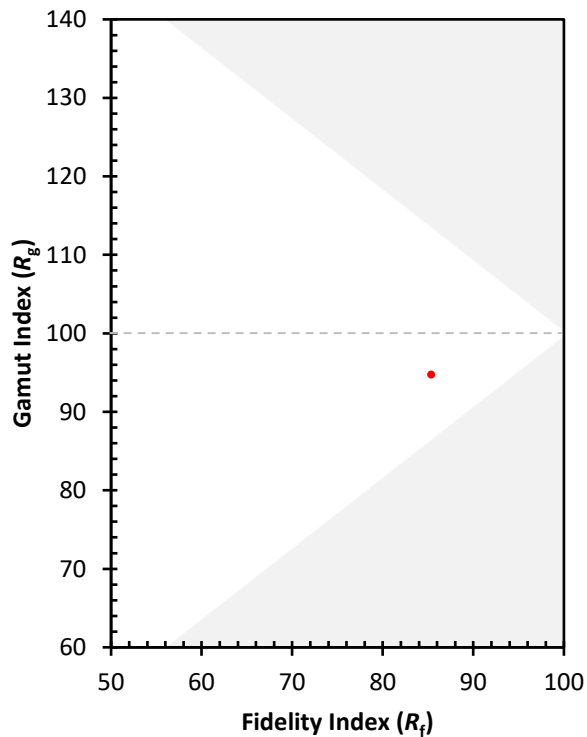
Color Rendition by Hue-Angle Bin



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Measure Comparisons



(END OF REPORT)