

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: P861214

Luminaire Tested: **8APVTLD-SL3C3 MID POWER 3500K 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: P861214
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 3500K 277V
Description: MID POWER
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER
Luminaire Equipment: Sample No. Condition Description

Summary

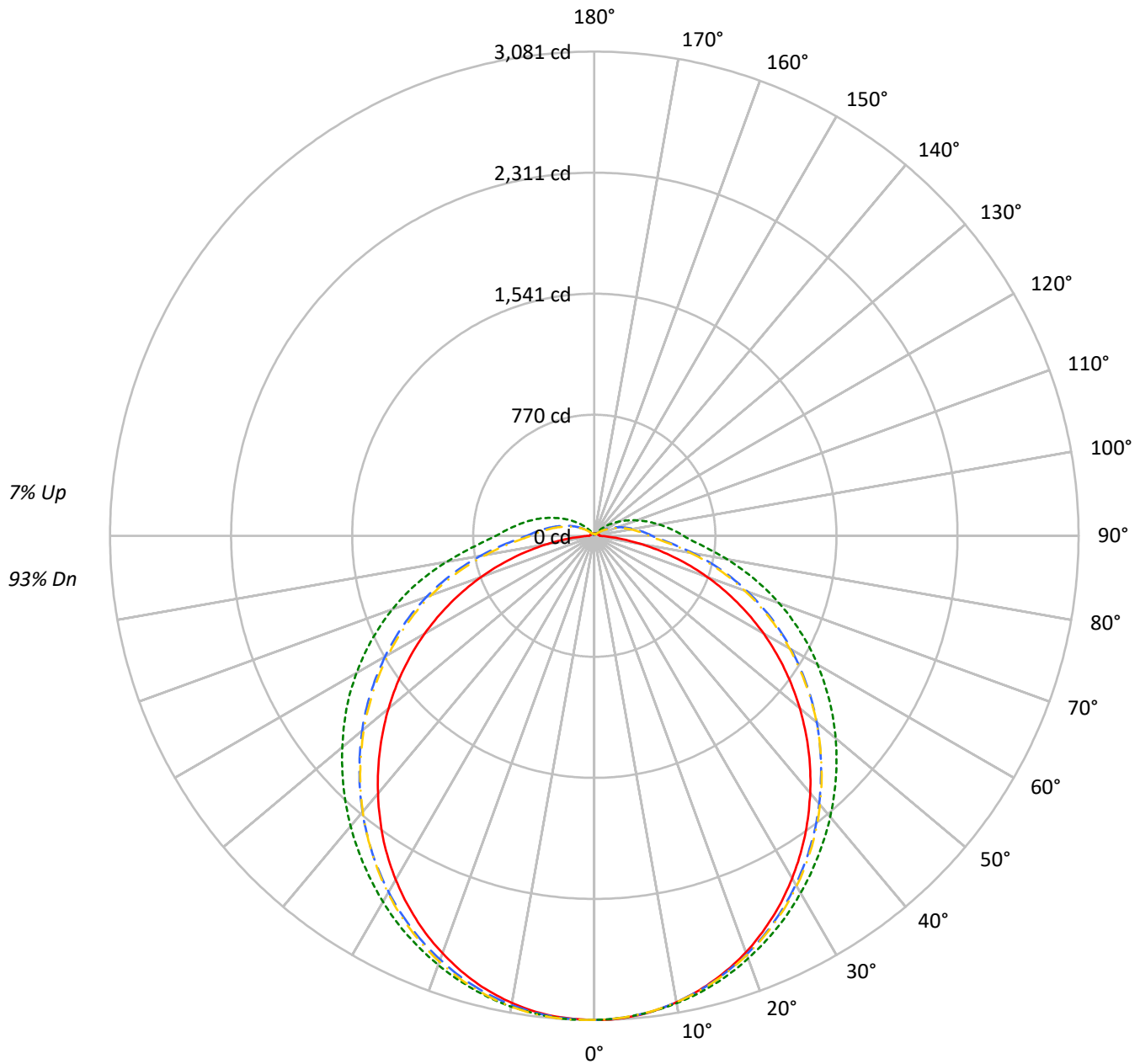
Lumens per Lamp: N/A
Luminaire Lumens: 10460.7 lumens
Efficiency: N/A
Efficacy: 134.3 lumens/watt
Spacing Criteria (0/90/45): 1.22 / 1.28 / 1.38
Luminous Opening: Rectangular w/ Sides (W: 0.33' x L: 8' x H: 0.08')
CIE Type: Direct

Input Watts (W): 77.9
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°	12435	12435	12435	12435
5°	12411	12143	12414	12191
10°	12331	11855	12352	11947
15°	12214	11569	12243	11693
20°	12068	11270	12094	11441
25°	11879	10982	11917	11196
30°	11662	10691	11705	10954
35°	11420	10418	11468	10714
40°	11160	10168	11184	10506
45°	10886	9928	10895	10309
50°	10580	9693	10602	10127
55°	10246	9467	10269	9986
60°	9861	9240	9892	9842
65°	9371	8997	9403	9701
70°	8739	8742	8791	9563
75°	7857	8467	7901	9402
80°	6622	8223	6688	9163
85°	5008	8188	5045	9168



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	291.4	2.8
10°-20°	832.9	8.0
20°-30°	1259.7	12.0
30°-40°	1522.3	14.6
40°-50°	1601.7	15.3
50°-60°	1504.4	14.4
60°-70°	1254.3	12.0
70°-80°	894.6	8.6
80°-90°	524.0	5.0
90°-100°	326.9	3.1
100°-110°	214.9	2.1
110°-120°	126.7	1.2
120°-130°	64.7	0.6
130°-140°	25.1	0.2
140°-150°	8.3	0.1
150°-160°	4.7	0.0
160°-170°	3.0	0.0
170°-180°	1.1	0.0
0°-30°	2384.0	22.8
0°-40°	3906.3	37.3
0°-60°	7012.4	67.0
0°-90°	9685.3	92.6
90°-120°	668.5	6.4
90°-150°	766.5	7.3
90°-180°	775.0	7.4
0°-180°	10460.7	100.0

CANDELA DISTRIBUTION:

	0°	90°	180°	270°	360°	Flux
0°	3081	3081	3081	3081	3081	
5°	3066	3062	3066	3074	3066	291
15°	2931	2954	2938	2986	2931	827
25°	2680	2753	2689	2807	2680	1234
35°	2334	2484	2344	2555	2334	1460
45°	1927	2174	1928	2258	1927	1486
55°	1478	1826	1481	1926	1478	1321
65°	1003	1447	1006	1560	1003	992
75°	523	1050	526	1165	523	555
85°	121	682	122	764	121	137
90°	39	568	33	626	39	23
95°	33	490	27	539	33	27
105°	28	349	24	397	28	29
115°	23	231	21	268	23	23
125°	18	134	17	162	18	16
135°	14	59	12	76	14	11
145°	11	11	9	18	11	7
155°	9	8	9	12	9	4
165°	10	8	12	11	10	3
175°	12	9	15	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°	3080.6	3080.6	3080.6	3080.6	3080.6	3080.6	3080.6	3080.6	3080.6	3080.6	3080.6
1°	3080.6	3080.6	3080.4	3079.4	3078.8	3078.6	3079.2	3079.0	3079.8	3080.6	3080.6
2°	3080.2	3079.6	3078.0	3076.8	3076.8	3075.6	3076.4	3076.8	3077.8	3079.4	3079.4
3°	3076.6	3075.8	3073.8	3072.5	3073.4	3071.3	3073.2	3074.0	3075.4	3077.2	3077.6
4°	3071.7	3070.9	3068.9	3066.9	3068.7	3066.3	3067.7	3069.1	3071.7	3073.0	3075.0
5°	3065.7	3063.9	3063.3	3060.7	3062.3	3059.9	3061.9	3062.9	3066.5	3068.1	3070.7
6°	3058.1	3056.1	3055.9	3053.5	3055.9	3052.7	3054.9	3055.7	3060.1	3061.5	3064.9
7°	3049.0	3046.6	3047.4	3045.2	3048.6	3045.2	3046.8	3046.8	3051.8	3054.1	3058.5
8°	3038.2	3035.8	3037.6	3035.4	3040.0	3036.2	3037.4	3036.4	3042.0	3044.8	3050.8
9°	3026.7	3023.7	3025.7	3026.1	3030.1	3026.1	3025.9	3024.7	3030.9	3034.6	3041.8
10°	3013.9	3010.8	3013.1	3014.9	3019.9	3015.1	3014.1	3012.5	3019.1	3022.9	3031.9
11°	3000.0	2997.0	2999.6	3002.2	3008.8	3003.2	3000.6	2998.4	3005.0	3010.0	3020.3
12°	2984.7	2982.1	2984.9	2989.7	2997.0	2990.9	2987.3	2983.7	2990.1	2996.0	3008.2
13°	2968.4	2966.2	2970.4	2975.5	2984.1	2977.1	2972.5	2967.2	2973.9	2981.1	2994.4
14°	2949.9	2948.1	2954.0	2961.0	2969.4	2961.8	2956.4	2949.5	2957.2	2965.6	2980.1
15°	2930.9	2930.4	2935.7	2946.3	2953.8	2946.5	2940.1	2929.6	2937.9	2947.7	2964.4
16°	2911.2	2911.2	2916.6	2929.2	2937.3	2929.8	2922.0	2908.7	2917.4	2927.2	2947.7
17°	2890.7	2891.3	2897.1	2911.6	2920.2	2912.2	2902.1	2887.6	2896.5	2907.1	2930.0
18°	2868.1	2870.2	2876.8	2892.3	2901.9	2892.9	2881.2	2865.1	2873.8	2885.8	2910.8
19°	2844.8	2847.2	2856.5	2873.8	2882.8	2872.0	2860.3	2842.0	2850.3	2863.5	2890.3
20°	2820.1	2822.3	2834.8	2852.7	2862.3	2851.9	2838.8	2817.5	2826.1	2840.2	2869.3
21°	2794.2	2798.0	2811.7	2832.2	2841.4	2830.4	2816.1	2792.6	2800.6	2815.7	2848.4
22°	2766.8	2771.3	2787.1	2810.7	2820.5	2808.4	2792.6	2767.6	2774.1	2790.6	2826.3
23°	2738.9	2744.3	2762.2	2786.9	2798.2	2786.1	2768.4	2742.7	2746.7	2764.6	2802.6
24°	2710.0	2716.0	2735.9	2763.4	2776.3	2762.6	2743.1	2715.6	2718.0	2737.5	2778.9
25°	2680.2	2687.5	2709.6	2739.7	2753.2	2738.9	2717.0	2687.9	2688.7	2709.6	2754.0
26°	2649.7	2658.3	2681.2	2714.8	2729.7	2713.6	2690.3	2657.7	2657.7	2681.4	2728.3
27°	2617.9	2627.6	2653.1	2689.1	2704.1	2688.1	2663.5	2628.4	2627.0	2651.7	2701.5
28°	2584.5	2595.8	2623.7	2662.7	2678.6	2661.5	2633.8	2596.4	2594.0	2621.1	2674.6
29°	2551.6	2563.2	2594.0	2635.4	2652.3	2634.6	2604.2	2564.2	2561.0	2589.8	2645.8
30°	2517.2	2529.9	2563.6	2606.9	2624.9	2607.3	2574.3	2532.1	2526.5	2557.2	2617.3
31°	2482.0	2495.9	2532.3	2578.3	2598.2	2578.9	2543.3	2497.9	2491.9	2525.5	2587.4
32°	2446.1	2460.9	2500.7	2549.6	2570.5	2549.8	2511.4	2463.3	2456.3	2492.1	2558.0
33°	2409.7	2425.6	2467.6	2520.0	2542.3	2519.4	2478.8	2427.8	2419.7	2457.5	2526.1
34°	2371.7	2390.0	2435.2	2489.7	2513.2	2489.7	2446.5	2391.8	2382.5	2424.0	2495.1
35°	2334.5	2353.0	2401.4	2459.9	2484.4	2459.9	2412.9	2354.6	2344.2	2388.4	2462.5
36°	2295.9	2316.2	2367.1	2428.6	2455.3	2428.4	2378.1	2317.0	2304.4	2352.2	2430.6
37°	2256.5	2278.0	2334.1	2397.6	2426.2	2397.6	2343.8	2278.8	2264.0	2315.6	2397.0
38°	2217.1	2239.8	2298.1	2367.3	2396.0	2366.7	2308.2	2238.6	2223.6	2278.4	2363.1
39°	2176.5	2200.7	2262.4	2336.3	2366.3	2334.5	2271.6	2198.2	2183.6	2240.2	2329.3
40°	2136.5	2160.7	2225.2	2304.6	2334.5	2301.9	2234.4	2158.0	2141.0	2201.7	2293.7
41°	2096.7	2121.3	2189.2	2271.0	2303.0	2270.0	2197.0	2118.0	2099.8	2163.7	2259.1
42°	2054.7	2080.9	2152.0	2237.8	2271.4	2236.6	2159.0	2077.4	2057.3	2123.3	2223.6



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
45°	1926.9	1958.3	2039.1	2137.3	2173.9	2134.9	2043.3	1951.2	1928.4	2001.6	2114.0
46°	1883.4	1917.1	2001.6	2102.4	2141.2	2100.0	2004.3	1909.1	1885.4	1959.8	2077.4
47°	1839.0	1874.0	1963.6	2066.6	2106.2	2064.6	1964.3	1866.5	1841.6	1918.9	2040.3
48°	1794.8	1831.2	1925.3	2032.0	2072.6	2029.8	1925.0	1823.3	1797.9	1877.8	2003.1
49°	1750.0	1787.6	1886.6	1996.4	2038.7	1994.2	1884.9	1779.3	1753.3	1834.8	1965.1
50°	1705.8	1744.6	1847.2	1961.2	2003.5	1957.3	1844.8	1734.9	1709.2	1792.5	1928.2
51°	1660.0	1701.2	1808.3	1924.4	1969.2	1921.8	1804.6	1691.9	1664.4	1749.3	1890.4
52°	1614.9	1656.6	1768.6	1888.8	1933.6	1884.6	1763.4	1647.0	1618.6	1705.8	1851.3
53°	1569.6	1613.0	1729.2	1852.4	1897.7	1847.3	1722.5	1602.7	1573.1	1662.3	1812.8
54°	1523.6	1568.5	1689.4	1814.4	1861.4	1809.8	1681.4	1558.1	1527.0	1619.5	1773.5
55°	1477.6	1523.9	1648.9	1777.9	1825.6	1772.1	1640.4	1512.9	1480.9	1575.3	1734.0
56°	1431.3	1479.8	1608.3	1740.0	1788.5	1734.7	1598.8	1467.9	1434.6	1530.9	1695.2
57°	1384.8	1434.9	1567.8	1701.8	1751.4	1696.3	1557.6	1422.7	1388.1	1487.3	1655.6
58°	1338.2	1389.5	1527.6	1662.2	1715.9	1657.7	1516.2	1377.4	1341.0	1442.6	1616.0
59°	1291.1	1345.0	1487.3	1623.5	1677.8	1618.6	1475.5	1331.4	1294.2	1398.6	1575.4
60°	1243.5	1300.7	1446.7	1584.2	1640.2	1579.1	1433.8	1286.8	1247.4	1354.7	1536.4
61°	1195.2	1255.2	1405.8	1544.0	1602.8	1540.0	1392.2	1240.3	1199.1	1310.2	1497.0
62°	1147.1	1210.9	1365.1	1506.0	1563.8	1500.3	1350.8	1194.2	1150.9	1266.3	1456.7
63°	1099.3	1166.4	1324.4	1466.1	1526.1	1460.6	1310.0	1148.9	1102.9	1222.3	1417.2
64°	1051.9	1121.4	1284.3	1428.4	1487.0	1421.2	1268.5	1103.9	1055.1	1177.2	1377.5
65°	1003.1	1077.3	1243.7	1390.2	1447.0	1380.6	1226.4	1058.7	1006.5	1133.0	1336.6
66°	954.5	1032.1	1202.2	1349.9	1409.3	1341.2	1185.0	1013.8	958.2	1089.7	1297.5
67°	906.4	987.7	1160.1	1311.0	1368.5	1301.3	1142.8	969.1	909.9	1045.0	1257.1
68°	858.1	942.7	1117.9	1270.3	1330.3	1261.3	1101.3	924.4	862.1	1000.6	1216.5
69°	810.4	898.4	1077.2	1230.9	1290.4	1221.2	1058.9	879.4	813.3	956.1	1175.9
70°	761.7	855.0	1035.9	1189.8	1249.5	1181.3	1016.8	835.8	766.2	912.5	1135.6
71°	713.4	810.6	995.2	1148.6	1209.7	1140.3	975.6	791.2	716.8	868.7	1094.4
72°	666.0	767.7	954.4	1107.1	1170.1	1100.9	934.9	747.9	669.6	825.5	1054.4
73°	617.9	724.3	914.4	1065.4	1129.8	1060.0	894.5	704.6	620.8	783.3	1013.8
74°	570.4	683.4	874.5	1024.7	1089.5	1019.9	853.9	661.5	573.6	740.3	973.3
75°	523.4	641.0	834.3	983.6	1049.5	980.7	813.9	619.0	526.3	698.1	932.9
76°	477.6	600.0	793.6	944.1	1009.1	941.3	773.9	577.0	479.8	657.4	892.4
77°	432.0	558.8	754.1	905.5	970.5	902.4	735.1	537.3	434.7	617.3	852.5
78°	387.1	518.7	713.8	867.1	931.2	863.2	695.3	496.7	389.8	577.6	812.4
79°	343.6	480.0	676.3	829.1	892.6	824.8	657.5	459.3	345.7	537.9	772.8
80°	301.7	443.0	638.7	791.3	855.3	787.8	620.6	420.9	304.7	499.2	735.9
81°	260.6	406.5	601.7	754.3	817.1	750.0	583.2	384.1	264.6	461.5	697.1
82°	221.5	371.8	566.5	718.0	782.6	714.6	549.0	348.8	225.6	424.4	660.3
83°	184.7	339.0	532.0	683.4	746.2	680.5	514.0	314.8	188.1	389.1	624.8
84°	151.6	306.8	500.1	650.2	713.6	647.9	483.1	283.2	153.7	354.6	591.4
85°	121.0	278.2	472.1	618.7	682.0	617.2	453.1	254.0	121.9	322.6	558.9
86°	95.0	251.6	445.8	591.2	653.0	588.0	425.7	227.1	94.0	292.5	527.1
87°	72.8	228.8	420.2	565.4	625.5	561.8	400.4	204.3	71.8	266.2	497.2



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
90°	38.8	180.6	367.5	507.1	568.4	505.9	348.5	155.7	32.6	207.2	430.0
91°	36.8	171.2	354.9	492.4	551.5	489.4	334.6	146.2	30.3	194.9	413.4
92°	35.8	161.7	342.3	477.8	535.7	475.4	322.7	137.4	29.3	184.0	398.5
93°	34.8	152.6	330.0	463.0	520.4	460.2	311.1	129.0	28.5	173.8	384.0
94°	34.0	144.2	318.0	449.4	503.9	445.7	299.5	121.0	28.1	163.8	369.8
95°	33.4	135.7	305.7	435.5	489.8	432.1	287.7	113.5	27.1	154.0	356.0
96°	32.6	127.9	294.4	422.9	474.4	417.2	276.5	106.1	26.5	145.1	342.1
97°	32.0	120.4	282.8	409.2	460.5	404.0	266.5	99.4	26.3	136.2	328.6
98°	31.2	113.6	272.2	396.2	445.1	390.6	255.8	92.9	26.2	128.1	316.2
99°	30.7	106.7	261.4	383.2	430.7	377.9	245.3	86.9	26.0	119.7	303.5
100°	30.3	100.4	250.4	370.3	416.1	365.1	234.3	81.0	25.9	112.5	291.2
101°	29.8	94.2	239.8	357.7	402.9	352.1	224.3	75.9	25.7	105.3	279.5
102°	29.4	89.1	229.8	345.1	388.2	338.6	214.6	70.4	25.3	98.6	268.3
103°	28.9	83.4	219.8	332.0	375.9	326.4	205.6	65.5	24.5	92.0	257.3
104°	28.3	78.1	210.2	319.7	361.4	313.6	196.1	61.1	24.1	86.2	246.0
105°	27.7	73.5	201.2	307.9	349.2	302.5	187.5	56.8	23.7	80.5	235.1
106°	27.1	68.7	191.9	295.7	336.0	290.7	178.2	52.3	23.7	74.8	224.7
107°	26.5	64.6	183.4	284.2	323.1	280.2	169.6	48.4	23.1	69.6	214.1
108°	25.9	60.1	174.7	273.2	311.0	269.3	160.3	44.4	22.7	65.0	204.2
109°	25.5	55.8	166.4	261.9	298.9	258.6	152.1	41.1	22.5	60.3	194.3
110°	25.1	51.7	158.2	250.8	286.5	247.4	144.1	37.1	22.4	55.4	184.7
111°	24.7	47.8	150.1	240.4	275.6	236.7	136.7	33.9	22.3	51.0	175.7
112°	24.1	43.9	142.5	229.5	263.9	225.5	129.2	30.8	22.2	46.7	166.8
113°	24.1	40.5	134.8	219.3	252.8	215.2	122.0	27.6	22.1	42.4	158.2
114°	23.5	37.3	127.3	209.3	241.7	204.5	114.6	25.2	21.9	38.7	149.6
115°	23.1	33.8	120.0	199.2	230.6	194.1	107.8	23.0	21.0	35.0	141.4
116°	22.7	31.2	113.2	189.6	220.5	183.9	101.0	21.0	20.2	31.4	133.2
117°	22.3	28.7	106.7	180.3	209.2	175.1	94.7	20.2	20.2	28.1	125.5
118°	21.7	26.3	99.8	171.4	199.8	166.2	88.2	19.5	19.4	25.3	117.5
119°	21.3	24.5	93.6	162.3	189.7	157.6	82.0	19.0	19.2	22.5	110.1
120°	20.9	23.9	87.2	153.8	180.0	149.0	75.9	18.7	18.8	20.1	103.2
121°	20.2	23.5	81.1	145.1	170.3	140.3	69.7	18.4	18.8	18.8	96.3
122°	19.6	23.1	75.1	136.6	161.8	132.1	64.8	18.1	18.6	18.4	89.5
123°	19.0	22.3	69.5	128.9	152.0	123.6	59.0	17.3	17.6	18.0	82.3
124°	18.0	22.3	64.3	120.7	143.5	116.0	53.8	16.9	17.0	17.4	76.3
125°	17.8	21.7	58.7	113.0	133.9	108.0	48.6	16.7	16.6	17.2	69.9
126°	17.2	20.8	53.4	105.2	126.2	100.4	43.4	16.1	16.0	16.6	64.1
127°	16.8	20.6	48.2	98.0	117.8	93.0	38.9	15.9	15.4	16.2	58.6
128°	16.4	20.2	43.5	90.8	109.7	85.7	34.7	15.5	14.9	15.8	52.6
129°	15.8	19.6	38.7	83.7	101.8	78.4	29.7	15.3	14.3	15.6	47.2
130°	15.8	19.2	34.1	76.9	94.5	72.0	26.0	15.3	13.8	15.4	42.1
131°	15.2	18.8	30.1	70.3	86.1	65.6	22.2	14.1	13.4	15.2	36.5
132°	14.8	18.2	26.0	64.1	79.8	59.3	18.9	13.7	12.7	14.2	31.9



TEST NUMBER: P861214

CATALOG NUMBER: 8APVTLD-SL3C3 MID POWER 3500K 277V

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
135°	13.6	16.6	17.5	46.1	58.9	41.9	13.2	12.5	11.9	13.4	19.1
136°	13.4	16.2	17.1	40.9	52.5	36.4	12.8	12.5	10.7	13.1	15.3
137°	12.8	15.8	16.3	35.7	46.4	31.7	12.3	12.7	10.3	12.8	13.4
138°	12.5	15.4	16.1	31.0	40.4	26.9	11.9	12.5	9.9	12.5	12.8
139°	12.3	15.0	15.3	25.9	34.7	22.3	11.5	11.3	9.9	12.2	12.2
140°	12.1	14.4	15.0	21.7	29.3	18.4	11.0	10.7	9.3	11.9	12.0
141°	11.5	14.2	14.8	18.0	24.2	14.5	10.6	10.5	9.2	11.6	11.6
142°	11.4	13.8	14.4	15.3	19.4	12.1	10.2	10.1	9.1	11.2	10.8
143°	11.2	13.2	13.8	14.5	15.1	11.7	10.1	9.7	9.1	10.8	10.2
144°	11.1	13.0	13.4	14.3	12.3	11.3	10.1	9.3	9.1	10.5	9.8
145°	10.9	12.8	13.2	14.3	11.1	11.1	10.0	9.2	9.1	10.3	9.6
146°	10.7	12.2	12.8	13.9	10.5	10.7	9.9	9.1	9.1	10.2	9.0
147°	10.5	11.7	12.5	13.5	10.3	10.2	9.9	9.0	9.1	10.0	8.7
148°	10.3	11.3	12.1	13.3	9.8	10.0	9.8	9.0	9.1	9.8	8.8
149°	9.9	11.3	11.8	13.0	9.6	9.8	9.2	8.9	9.1	9.8	8.8
150°	9.9	11.1	11.4	12.8	9.2	9.7	8.8	8.9	9.1	9.8	8.9
151°	9.7	10.7	11.6	12.5	9.2	9.5	8.8	9.0	9.1	9.8	8.9
152°	9.5	10.5	11.4	12.3	9.4	9.3	8.7	9.0	9.1	9.8	9.0
153°	9.3	10.3	11.2	12.1	9.2	9.1	8.7	9.1	9.1	9.8	9.0
154°	9.3	10.3	11.0	11.9	8.4	9.0	8.7	9.1	9.1	9.8	9.0
155°	9.3	10.3	11.2	11.8	8.4	8.8	8.7	9.2	9.1	9.8	9.1
156°	9.2	10.3	11.2	11.6	8.3	8.4	8.7	9.2	9.1	9.8	9.1
157°	9.2	10.3	11.2	11.4	8.3	8.6	8.6	9.3	9.1	9.7	9.2
158°	9.2	10.3	11.2	11.2	8.3	8.6	8.6	9.3	9.4	9.7	9.2
159°	9.3	10.3	11.1	11.1	8.3	8.6	8.6	9.4	9.8	9.7	9.3
160°	9.5	10.3	11.1	10.9	8.3	8.6	8.6	9.4	10.1	9.7	9.3
161°	9.6	10.3	11.1	10.7	8.3	8.6	8.6	9.4	10.4	10.1	9.4
162°	9.8	10.3	11.1	10.6	8.4	8.6	9.0	9.5	10.7	10.5	10.4
163°	9.9	10.3	11.1	10.4	8.4	8.6	9.2	10.3	11.1	11.3	11.0
164°	10.1	10.3	11.1	10.3	8.5	8.6	9.2	10.7	11.7	11.5	11.4
165°	10.3	10.3	11.1	10.3	8.5	8.6	9.4	10.9	12.5	11.7	11.6
166°	10.9	10.3	11.1	10.2	8.6	8.6	9.8	11.3	13.2	12.3	11.8
167°	11.9	10.5	11.1	10.1	8.6	8.6	9.6	11.7	13.8	12.4	12.4
168°	12.1	11.1	11.1	10.1	8.6	8.6	9.7	11.5	14.0	12.4	13.2
169°	12.3	12.1	11.1	10.0	8.7	8.6	9.8	11.7	14.2	12.4	13.4
170°	12.1	12.3	11.0	10.0	8.7	8.6	9.9	11.7	14.4	12.4	13.4
171°	12.5	12.3	11.0	9.9	8.7	8.6	10.0	11.9	14.6	12.4	13.4
172°	12.5	12.6	11.0	9.9	8.8	8.6	10.1	12.0	14.8	12.5	13.3
173°	12.5	13.0	11.0	9.8	8.8	8.6	10.2	12.1	14.7	12.5	13.3
174°	12.4	13.4	11.0	9.8	8.8	9.0	10.6	12.2	14.7	12.5	13.3
175°	12.4	13.2	11.0	9.7	9.0	8.8	10.4	12.3	14.6	12.5	13.3
176°	12.4	13.2	11.0	9.6	9.4	9.4	10.4	12.4	14.6	12.5	13.2
177°	12.3	13.2	11.6	9.6	9.6	9.6	10.4	12.5	14.6	12.5	13.2

TEST NUMBER: P861214
CATALOG NUMBER: 8APVTLD-SL3C3 MID POWER 3500K 277V

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
180°	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5



TEST NUMBER: P861214

CATALOG NUMBER: 8APVTLD-SL3C3 MID POWER 3500K 277V

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
0°	3080.6	3080.6	3080.6	3080.6	3080.6	3080.6
1°	3080.4	3081.0	3081.4	3081.0	3081.0	3080.6
2°	3080.4	3081.2	3081.8	3081.4	3080.8	3080.2
3°	3079.2	3081.4	3081.8	3081.4	3077.6	3076.6
4°	3076.0	3079.0	3080.0	3079.6	3073.2	3071.7
5°	3072.5	3074.4	3076.6	3076.4	3067.3	3065.7
6°	3067.5	3069.5	3072.5	3072.3	3060.1	3058.1
7°	3061.1	3063.5	3066.7	3067.1	3051.6	3049.0
8°	3054.9	3057.9	3060.1	3060.5	3042.4	3038.2
9°	3047.2	3050.6	3052.4	3051.6	3031.1	3026.7
10°	3038.6	3043.2	3043.4	3042.2	3018.5	3013.9
11°	3028.9	3034.2	3033.6	3031.9	3004.8	3000.0
12°	3018.3	3022.9	3023.5	3020.1	2990.5	2984.7
13°	3006.8	3011.6	3012.5	3006.6	2974.1	2968.4
14°	2994.0	2998.8	3000.4	2992.2	2957.4	2949.9
15°	2981.3	2985.5	2987.7	2977.1	2939.5	2930.9
16°	2966.6	2970.4	2973.1	2960.2	2920.0	2911.2
17°	2951.8	2956.0	2958.6	2942.7	2900.5	2890.7
18°	2934.9	2939.5	2941.3	2923.8	2880.2	2868.1
19°	2917.2	2923.4	2923.8	2903.7	2857.9	2844.8
20°	2898.3	2905.7	2904.5	2883.0	2834.4	2820.1
21°	2877.6	2887.2	2884.8	2862.5	2810.1	2794.2
22°	2857.1	2868.1	2864.9	2839.8	2784.3	2766.8
23°	2835.6	2847.6	2844.2	2815.3	2757.8	2738.9
24°	2814.3	2827.3	2822.1	2790.6	2731.1	2710.0
25°	2792.2	2806.8	2799.0	2765.6	2702.5	2680.2
26°	2770.3	2786.3	2775.9	2739.3	2673.6	2649.7
27°	2746.1	2762.8	2750.6	2712.2	2642.8	2617.9
28°	2721.2	2739.3	2726.4	2683.6	2612.1	2584.5
29°	2696.1	2714.2	2699.9	2654.9	2579.9	2551.6
30°	2670.8	2689.3	2675.0	2624.7	2548.0	2517.2
31°	2644.6	2663.5	2648.5	2594.4	2514.8	2482.0
32°	2616.9	2636.6	2621.5	2563.8	2480.0	2446.1
33°	2589.4	2609.5	2593.8	2531.7	2445.5	2409.7
34°	2561.6	2583.1	2566.7	2498.9	2410.1	2371.7
35°	2532.5	2555.0	2536.9	2466.4	2373.7	2334.5
36°	2502.5	2527.7	2507.8	2431.6	2336.9	2295.9
37°	2472.2	2499.1	2478.4	2397.8	2299.7	2256.5
38°	2442.4	2471.4	2447.7	2363.1	2261.3	2217.1
39°	2412.1	2442.2	2416.7	2328.1	2223.4	2176.5
40°	2381.1	2412.1	2385.6	2291.3	2184.0	2136.5
41°	2351.4	2382.5	2353.8	2255.7	2144.6	2096.7
42°	2320.0	2351.4	2321.4	2218.3	2105.0	2054.7



TEST NUMBER: P861214

CATALOG NUMBER: 8APVTLD-SL3C3 MID POWER 3500K 277V

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
45°	2224.4	2257.5	2221.6	2106.0	1983.4	1926.9
46°	2191.2	2224.8	2187.4	2067.8	1941.9	1883.4
47°	2157.8	2191.6	2154.4	2029.2	1900.8	1839.0
48°	2124.5	2159.6	2118.8	1990.1	1858.8	1794.8
49°	2090.3	2126.1	2084.5	1951.7	1816.3	1750.0
50°	2056.1	2093.1	2048.9	1912.7	1773.6	1705.8
51°	2021.8	2059.8	2012.7	1873.2	1729.9	1660.0
52°	1986.1	2025.8	1977.2	1833.7	1687.4	1614.9
53°	1951.1	1993.5	1941.4	1793.8	1643.7	1569.6
54°	1915.3	1959.3	1904.5	1754.0	1600.2	1523.6
55°	1879.3	1925.7	1867.0	1714.5	1556.2	1477.6
56°	1842.4	1890.6	1829.1	1674.1	1512.3	1431.3
57°	1806.4	1855.7	1792.4	1634.1	1467.6	1384.8
58°	1768.8	1819.1	1753.1	1593.1	1423.8	1338.2
59°	1731.6	1783.1	1716.2	1552.6	1378.7	1291.1
60°	1694.0	1747.0	1677.5	1512.4	1333.8	1243.5
61°	1655.7	1709.3	1640.3	1472.0	1288.6	1195.2
62°	1617.2	1673.0	1601.2	1431.3	1243.7	1147.1
63°	1579.1	1635.5	1562.7	1390.8	1198.3	1099.3
64°	1540.4	1598.0	1523.6	1349.7	1153.6	1051.9
65°	1502.2	1560.2	1484.5	1309.2	1107.9	1003.1
66°	1464.1	1521.3	1445.5	1268.8	1063.1	954.5
67°	1424.5	1483.9	1406.2	1228.4	1018.8	906.4
68°	1385.4	1443.8	1366.6	1187.4	974.2	858.1
69°	1345.9	1406.3	1327.1	1145.4	929.3	810.4
70°	1306.6	1366.9	1287.9	1104.8	885.6	761.7
71°	1265.8	1327.4	1248.3	1063.2	841.0	713.4
72°	1225.9	1288.3	1208.8	1022.4	797.8	666.0
73°	1185.6	1248.1	1169.0	980.6	754.1	617.9
74°	1145.3	1207.9	1128.8	940.0	710.4	570.4
75°	1106.9	1165.3	1089.6	898.7	667.6	523.4
76°	1067.7	1123.2	1050.2	858.5	625.9	477.6
77°	1029.3	1079.7	1010.6	817.8	584.3	432.0
78°	990.1	1035.8	971.8	777.7	543.2	387.1
79°	950.4	994.7	930.5	739.0	502.6	343.6
80°	911.5	953.1	892.9	701.2	463.3	301.7
81°	873.9	912.2	854.1	664.7	425.2	260.6
82°	835.9	872.7	815.8	628.7	389.3	221.5
83°	799.9	834.2	778.9	594.3	354.5	184.7
84°	765.4	799.0	742.9	560.4	321.6	151.6
85°	731.5	763.6	708.6	528.3	290.7	121.0
86°	699.1	732.4	676.8	498.3	263.2	95.0
87°	668.7	701.0	646.6	470.5	237.1	72.8



TEST NUMBER: P861214

CATALOG NUMBER: 8APVTLD-SL3C3 MID POWER 3500K 277V

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
90°	596.0	626.4	573.7	403.0	179.7	38.8
91°	576.2	605.9	553.0	387.2	168.9	36.8
92°	559.1	588.4	536.2	372.6	159.0	35.8
93°	542.7	571.5	520.1	358.6	150.0	34.8
94°	526.2	555.4	503.5	344.2	140.8	34.0
95°	509.6	539.1	488.1	330.8	132.3	33.4
96°	492.9	523.8	472.4	318.8	124.3	32.6
97°	477.3	508.4	457.3	307.5	116.2	32.0
98°	461.4	492.7	443.1	295.6	108.6	31.2
99°	445.3	479.4	429.0	283.2	101.8	30.7
100°	430.6	464.6	413.8	271.9	95.6	30.3
101°	415.9	450.0	399.2	260.3	89.4	29.8
102°	400.2	436.9	384.8	249.5	83.5	29.4
103°	387.0	423.2	370.6	238.8	78.4	28.9
104°	371.6	409.4	357.6	227.9	73.1	28.3
105°	358.3	396.7	345.5	217.6	68.2	27.7
106°	344.1	383.8	333.9	207.4	63.7	27.1
107°	330.4	370.4	322.1	197.6	59.6	26.5
108°	317.1	357.1	309.0	188.0	55.4	25.9
109°	304.8	343.8	296.4	179.0	51.3	25.5
110°	292.0	330.0	284.5	170.2	47.3	25.1
111°	280.0	317.0	272.4	161.3	43.8	24.7
112°	268.2	304.1	260.7	152.9	40.4	24.1
113°	256.9	291.6	248.9	144.7	37.2	24.1
114°	245.4	279.5	237.9	136.7	34.1	23.5
115°	234.3	268.1	227.3	129.4	31.3	23.1
116°	223.5	256.2	216.8	121.7	28.6	22.7
117°	213.1	244.3	206.2	114.5	26.7	22.3
118°	202.0	233.3	195.7	107.5	25.4	21.7
119°	192.2	222.2	186.0	100.8	25.4	21.3
120°	182.5	211.8	176.3	94.2	24.8	20.9
121°	172.2	201.0	167.1	87.7	24.2	20.2
122°	163.3	190.8	158.0	81.6	23.8	19.6
123°	153.7	180.8	148.7	75.2	23.4	19.0
124°	144.8	170.9	139.9	69.4	23.0	18.0
125°	136.1	161.5	131.6	64.1	22.4	17.8
126°	127.1	152.0	123.2	58.3	22.2	17.2
127°	119.3	142.6	114.7	53.1	21.4	16.8
128°	110.6	133.8	106.9	47.9	21.0	16.4
129°	102.8	124.9	98.9	42.9	20.8	15.8
130°	94.9	116.6	91.0	38.0	20.0	15.8
131°	87.1	107.8	83.7	34.1	19.4	15.2
132°	80.0	99.7	76.4	29.6	19.0	14.8



TEST NUMBER: P861214

CATALOG NUMBER: 8APVTLD-SL3C3 MID POWER 3500K 277V

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
135°	59.0	76.5	56.9	19.6	17.5	13.6
136°	52.6	69.3	50.9	18.8	17.3	13.4
137°	46.4	62.9	44.9	18.0	16.6	12.8
138°	40.3	56.4	39.5	17.5	16.1	12.5
139°	34.4	49.8	34.2	17.1	15.7	12.3
140°	28.8	43.5	29.0	16.5	15.1	12.1
141°	23.6	37.9	24.2	16.3	14.7	11.5
142°	18.7	32.2	20.1	15.7	14.3	11.4
143°	14.5	26.8	17.0	15.3	13.9	11.2
144°	12.4	21.8	16.4	14.9	13.7	11.1
145°	12.0	17.9	15.8	14.3	13.1	10.9
146°	11.8	15.8	15.4	14.1	12.9	10.7
147°	11.6	15.2	15.4	13.5	12.1	10.5
148°	10.8	15.0	15.0	13.1	12.3	10.3
149°	10.4	14.8	14.7	12.6	11.9	9.9
150°	10.2	14.4	14.3	12.4	11.5	9.9
151°	10.0	14.0	13.9	12.0	11.5	9.7
152°	9.2	13.7	13.3	11.8	10.9	9.5
153°	9.4	13.1	13.1	11.6	10.9	9.3
154°	9.0	13.1	13.1	11.6	10.9	9.3
155°	8.9	12.5	12.5	11.7	10.9	9.3
156°	8.8	12.3	12.5	11.7	10.9	9.2
157°	8.7	12.1	12.1	11.7	11.0	9.2
158°	8.6	11.9	11.9	11.7	11.0	9.2
159°	8.5	11.7	11.7	11.7	11.0	9.3
160°	8.4	11.5	11.9	11.7	11.0	9.5
161°	8.6	11.5	11.7	11.7	11.0	9.6
162°	8.8	11.4	11.3	11.7	11.1	9.8
163°	9.2	11.2	11.2	11.7	11.1	9.9
164°	9.6	11.1	11.1	11.8	11.7	10.1
165°	10.0	11.0	11.0	11.8	11.9	10.3
166°	10.0	10.9	11.0	11.8	12.3	10.9
167°	10.2	10.7	10.9	11.8	12.1	11.9
168°	10.8	10.5	10.9	11.8	12.3	12.1
169°	10.6	10.5	10.8	11.8	12.5	12.3
170°	11.0	10.3	10.8	11.9	12.8	12.1
171°	11.0	10.1	10.7	11.9	13.0	12.5
172°	11.1	10.0	10.7	11.9	13.3	12.5
173°	11.2	9.9	10.6	11.9	13.5	12.5
174°	11.2	9.8	10.6	12.0	13.9	12.4
175°	11.3	9.7	10.5	12.0	13.9	12.4
176°	11.4	9.6	10.5	12.0	13.9	12.4
177°	11.4	9.4	10.4	12.2	14.3	12.3



TEST NUMBER: P861214
CATALOG NUMBER: 8APVTLD-SL3C3 MID POWER 3500K 277V

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
180°	12.5	12.5	12.5	12.5	12.5	12.5



Report Generated By 670246072 / DESKTOP-50001EG





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







43°	2012.3	2041.3	2114.0	2204.1	2239.0	2202.7	2121.1	2035.6	2014.3	2082.5	2187.0
44°	1969.6	2000.7	2077.2	2170.5	2206.7	2168.9	2082.5	1994.0	1971.6	2042.5	2150.6



88°	54.3	208.5	399.3	543.7	604.3	541.1	380.7	184.7	53.7	243.7	470.8
89°	43.7	191.8	381.1	523.4	584.1	520.9	362.9	167.9	40.7	223.9	449.1



133°	14.2	17.8	22.5	57.9	71.9	53.3	15.9	13.3	12.3	13.8	27.5
134°	14.0	17.4	19.1	52.1	65.7	47.5	13.7	13.1	12.3	13.6	23.0



178°	12.5	13.2	11.4	9.6	9.6	9.4	10.4	12.5	14.2	12.5	13.2
179°	12.5	13.2	11.4	9.6	9.6	9.4	10.4	12.5	14.2	12.5	13.2





43°	2288.1	2320.8	2289.1	2181.8	2064.6	2012.3
44°	2256.5	2288.1	2255.5	2144.4	2024.0	1969.6



88°	642.1	673.1	619.4	445.4	215.0	54.3
89°	616.1	648.9	595.0	423.4	194.6	43.7



133°	72.4	91.8	69.6	25.7	18.8	14.2
134°	65.9	84.3	63.6	22.3	18.0	14.0



178°	11.4	9.4	10.4	12.4	14.1	12.5
179°	11.4	9.4	10.4	12.6	14.1	12.5



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: SP1-2210-820-6

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: SP1-2210-820-6
 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]

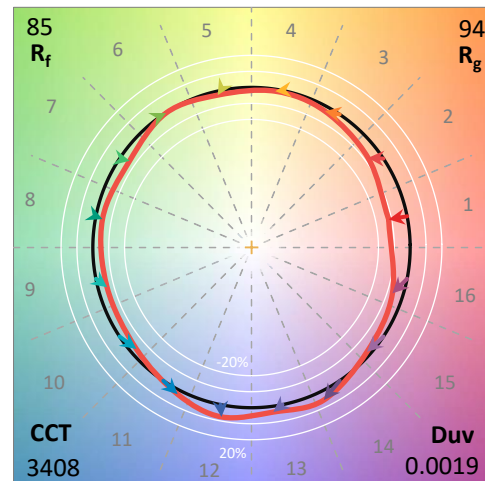
Spectral Parameters

CCT (K): 3408
 CIE u' : 0.2372
 CIE v' : 0.5156
 Duv: 0.0019
 CIE x: 0.4126
 CIE y: 0.3987
 CIE z: 0.1887
 Peak Wavelength (nm): 601
 Dominant Wavelength (nm): 580
 Purity: 43.7

CRI (Ra): 83.5
 R1: 81.8
 R2: 91.2
 R3: 96.7
 R4: 81.5
 R5: 81.9
 R6: 88.8
 R7: 84.5
 R8: 61.7

R9: 8.7
 R10: 79.8
 R11: 80.9
 R12: 67.5
 R13: 84.2
 R14: 98.7

Rf: 85.3
 Rg: 94.4



Test Conditions

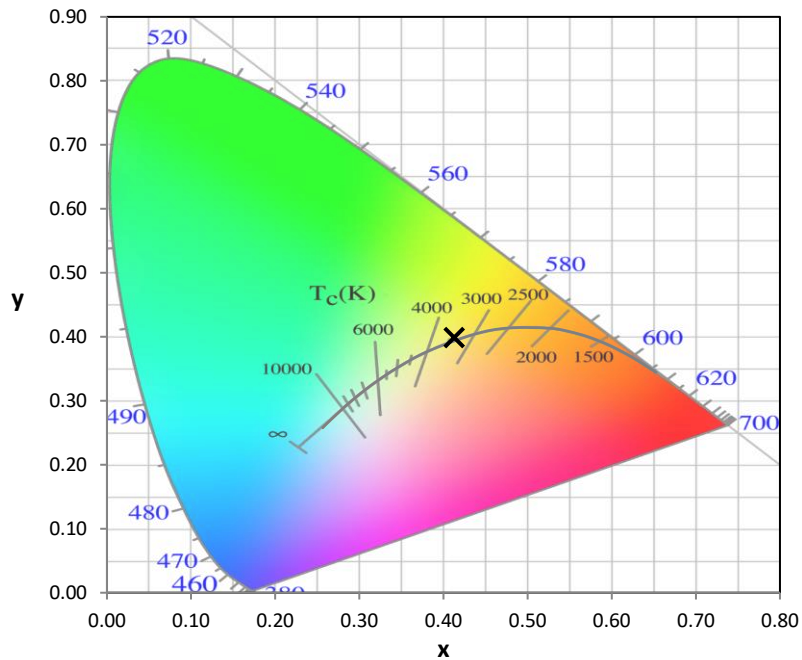
Stabilization Time: 49M
 Operation Time: 12H
 Room Temperature (°C) / RH%: 24.0/40%
 Sphere Temperature (°C): 24.6

REPORT NUMBER: SP1-2210-820-6

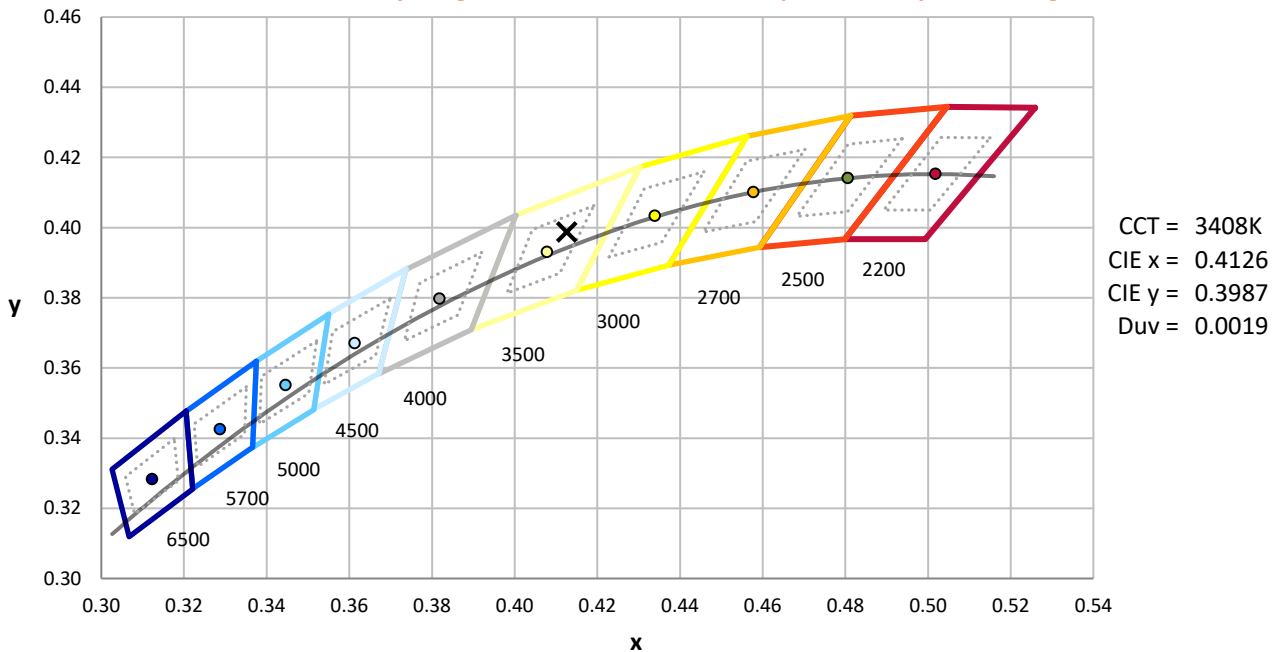
Measurement and Test Equipment			
Instrument	Identification Number	Calibration Date	Calibration Due Date
Photometer	76INCH SPHERE IN0058	8/8/2022	2/8/2023
Power Meter	XITRON 2801 IN0071	11/29/2021	11/29/2022
AC Power Source	CHROMA 61603 IN0063	11/29/2021	11/29/2022
DC Power Source	AGILENT E3634A IN0208	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: SP1-2210-820-6

CIE 1931 Chromaticity Diagram



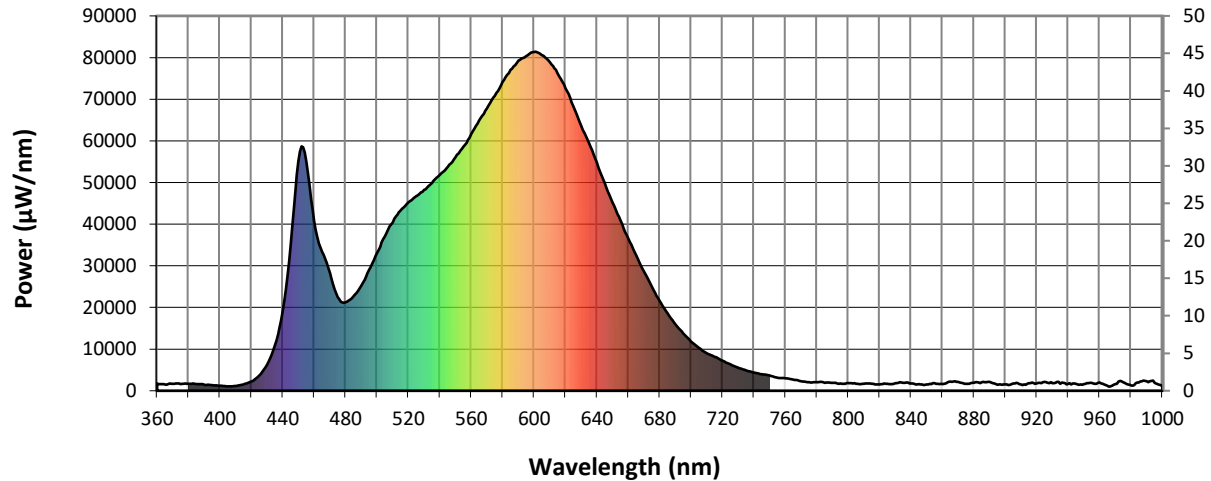
CIE 1931 Chromaticity Diagram with 2017 ANSI 7-Step and 4-Step Quadrangles



Point lies inside the ANSI 3500K 4-step quadrangle

REPORT NUMBER: SP1-2210-820-6

Photopic Flux vs. Wavelength

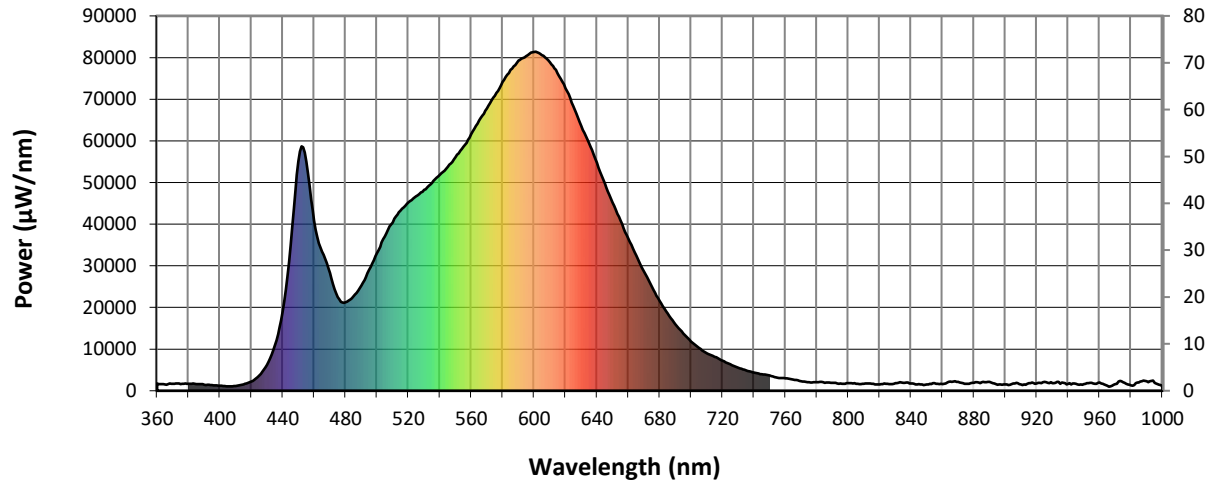


#####

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	1712	NR	490	25279	NR	620	72559	NR	750	3648	NR	880	1885	NR
365	1481	NR	495	28999	NR	625	68344	NR	755	3136	NR	885	2021	NR
370	1644	NR	500	33056	NR	630	63583	NR	760	2998	NR	890	2108	NR
375	1623	NR	505	37033	NR	635	59493	NR	765	2676	NR	895	1427	NR
380	1645	NR	510	40418	NR	640	54727	NR	770	2297	NR	900	1507	NR
385	1621	NR	515	43259	NR	645	49751	NR	775	2015	NR	905	1745	NR
390	1416	NR	520	45270	NR	650	45175	NR	780	2057	NR	910	1518	NR
395	1335	NR	525	46700	NR	655	40856	NR	785	1931	NR	915	1797	NR
400	1171	NR	530	48195	NR	660	36522	NR	790	1888	NR	920	1751	NR
405	1087	NR	535	49899	NR	665	32492	NR	795	1719	NR	925	2148	NR
410	1128	NR	540	51817	NR	670	28639	NR	800	1850	NR	930	1788	NR
415	1537	NR	545	53742	NR	675	24935	NR	805	1695	NR	935	1669	NR
420	2184	NR	550	56068	NR	680	21545	NR	810	1670	NR	940	1689	NR
425	3633	NR	555	58585	NR	685	18549	NR	815	1706	NR	945	1665	NR
430	6234	NR	560	61564	NR	690	15988	NR	820	1546	NR	950	1581	NR
435	10932	NR	565	64869	NR	695	13736	NR	825	1698	NR	955	1871	NR
440	19071	NR	570	67781	NR	700	11828	NR	830	1806	NR	960	1959	NR
445	34944	NR	575	70790	NR	705	10309	NR	835	1898	NR	965	1234	NR
450	55079	NR	580	74093	NR	710	8996	NR	840	1728	NR	970	1554	NR
455	55014	NR	585	77038	NR	715	8158	NR	845	1560	NR	975	2051	NR
460	40875	NR	590	79245	NR	720	7196	NR	850	1537	NR	980	1293	NR
465	33423	NR	595	80333	NR	725	6341	NR	855	1800	NR	985	1966	NR
470	28260	NR	600	81356	NR	730	5528	NR	860	1572	NR	990	2266	NR
475	22526	NR	605	80555	NR	735	4932	NR	865	2177	NR	995	1885	NR
480	21265	NR	610	78876	NR	740	4365	NR	870	2099	NR	1000	1088	NR
485	22618	NR	615	76232	NR	745	3964	NR	875	1631	NR			

REPORT NUMBER: SP1-2210-820-6

Scotopic Flux vs. Wavelength



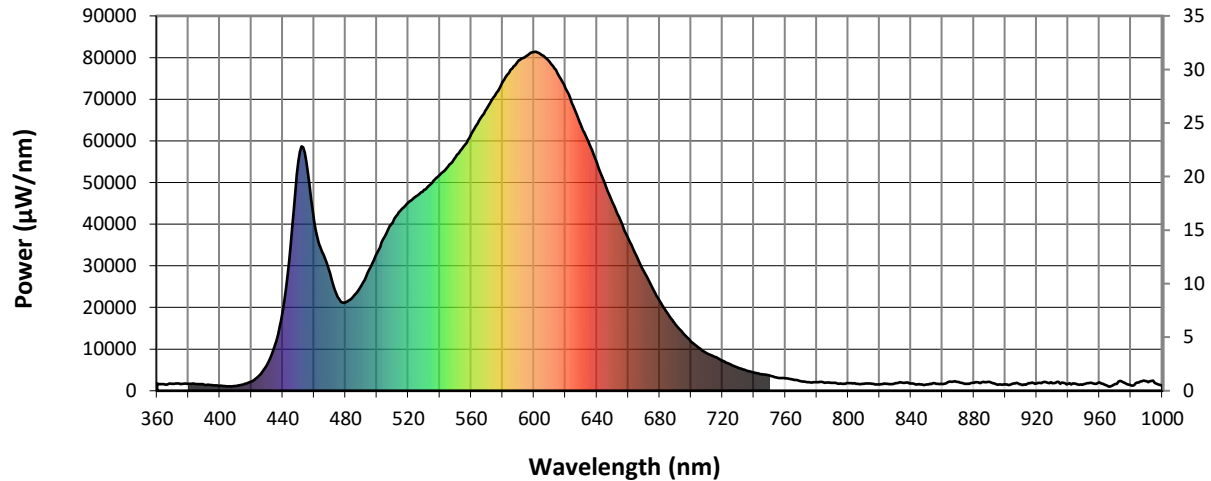
Scotopic Lumens: 6512.6

S/P: 1.52

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	1712	NR	490	25279	NR	620	72559	NR	750	3648	NR	880	1885	NR
365	1481	NR	495	28999	NR	625	68344	NR	755	3136	NR	885	2021	NR
370	1644	NR	500	33056	NR	630	63583	NR	760	2998	NR	890	2108	NR
375	1623	NR	505	37033	NR	635	59493	NR	765	2676	NR	895	1427	NR
380	1645	NR	510	40418	NR	640	54727	NR	770	2297	NR	900	1507	NR
385	1621	NR	515	43259	NR	645	49751	NR	775	2015	NR	905	1745	NR
390	1416	NR	520	45270	NR	650	45175	NR	780	2057	NR	910	1518	NR
395	1335	NR	525	46700	NR	655	40856	NR	785	1931	NR	915	1797	NR
400	1171	NR	530	48195	NR	660	36522	NR	790	1888	NR	920	1751	NR
405	1087	NR	535	49899	NR	665	32492	NR	795	1719	NR	925	2148	NR
410	1128	NR	540	51817	NR	670	28639	NR	800	1850	NR	930	1788	NR
415	1537	NR	545	53742	NR	675	24935	NR	805	1695	NR	935	1669	NR
420	2184	NR	550	56068	NR	680	21545	NR	810	1670	NR	940	1689	NR
425	3633	NR	555	58585	NR	685	18549	NR	815	1706	NR	945	1665	NR
430	6234	NR	560	61564	NR	690	15988	NR	820	1546	NR	950	1581	NR
435	10932	NR	565	64869	NR	695	13736	NR	825	1698	NR	955	1871	NR
440	19071	NR	570	67781	NR	700	11828	NR	830	1806	NR	960	1959	NR
445	34944	NR	575	70790	NR	705	10309	NR	835	1898	NR	965	1234	NR
450	55079	NR	580	74093	NR	710	8996	NR	840	1728	NR	970	1554	NR
455	55014	NR	585	77038	NR	715	8158	NR	845	1560	NR	975	2051	NR
460	40875	NR	590	79245	NR	720	7196	NR	850	1537	NR	980	1293	NR
465	33423	NR	595	80333	NR	725	6341	NR	855	1800	NR	985	1966	NR
470	28260	NR	600	81356	NR	730	5528	NR	860	1572	NR	990	2266	NR
475	22526	NR	605	80555	NR	735	4932	NR	865	2177	NR	995	1885	NR
480	21265	NR	610	78876	NR	740	4365	NR	870	2099	NR	1000	1088	NR
485	22618	NR	615	76232	NR	745	3964	NR	875	1631	NR			

REPORT NUMBER: SP1-2210-820-6

Melanopic Flux vs. Wavelength



Melanopic Lumens: 2558.7 S/P: 0.6

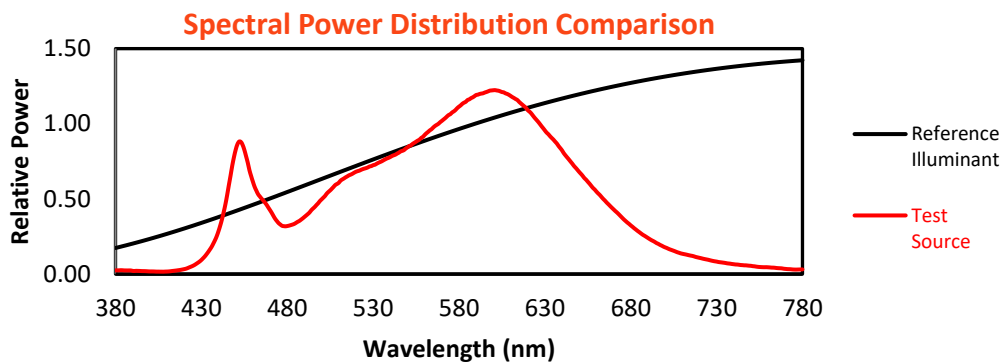
λ (nm)	Power (μW/nm)	Lumens (φ/nm)	λ (nm)	Power (μW/nm)	Lumens (φ/nm)	λ (nm)	Power (μW/nm)	Lumens (φ/nm)	λ (nm)	Power (μW/nm)	Lumens (φ/nm)	λ (nm)	Power (μW/nm)	Lumens (φ/nm)
360	1712	NR	490	25279	NR	620	72559	NR	750	3648	NR	880	1885	NR
365	1481	NR	495	28999	NR	625	68344	NR	755	3136	NR	885	2021	NR
370	1644	NR	500	33056	NR	630	63583	NR	760	2998	NR	890	2108	NR
375	1623	NR	505	37033	NR	635	59493	NR	765	2676	NR	895	1427	NR
380	1645	NR	510	40418	NR	640	54727	NR	770	2297	NR	900	1507	NR
385	1621	NR	515	43259	NR	645	49751	NR	775	2015	NR	905	1745	NR
390	1416	NR	520	45270	NR	650	45175	NR	780	2057	NR	910	1518	NR
395	1335	NR	525	46700	NR	655	40856	NR	785	1931	NR	915	1797	NR
400	1171	NR	530	48195	NR	660	36522	NR	790	1888	NR	920	1751	NR
405	1087	NR	535	49899	NR	665	32492	NR	795	1719	NR	925	2148	NR
410	1128	NR	540	51817	NR	670	28639	NR	800	1850	NR	930	1788	NR
415	1537	NR	545	53742	NR	675	24935	NR	805	1695	NR	935	1669	NR
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425	3633	NR	555	58585	NR	685	18549	NR	815	1706	NR	945	1665	NR
430	6234	NR	560	61564	NR	690	15988	NR	820	1546	NR	950	1581	NR
435	10932	NR	565	64869	NR	695	13736	NR	825	1698	NR	955	1871	NR
440	19071	NR	570	67781	NR	700	11828	NR	830	1806	NR	960	1959	NR
445	34944	NR	575	70790	NR	705	10309	NR	835	1898	NR	965	1234	NR
450	55079	NR	580	74093	NR	710	8996	NR	840	1728	NR	970	1554	NR
455	55014	NR	585	77038	NR	715	8158	NR	845	1560	NR	975	2051	NR
460	40875	NR	590	79245	NR	720	7196	NR	850	1537	NR	980	1293	NR
465	33423	NR	595	80333	NR	725	6341	NR	855	1800	NR	985	1966	NR
470	28260	NR	600	81356	NR	730	5528	NR	860	1572	NR	990	2266	NR
475	22526	NR	605	80555	NR	735	4932	NR	865	2177	NR	995	1885	NR
480	21265	NR	610	78876	NR	740	4365	NR	870	2099	NR	1000	1088	NR
485	22618	NR	615	76232	NR	745	3964	NR	875	1631	NR			

REPORT NUMBER: SP1-2210-820-6

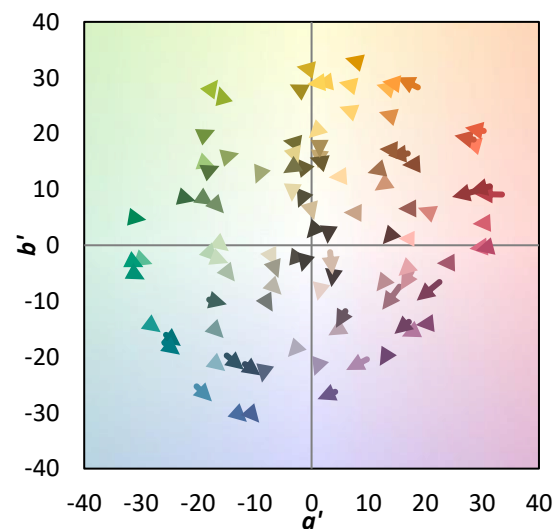
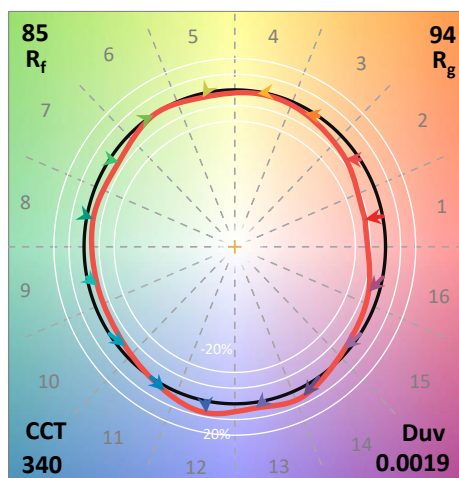
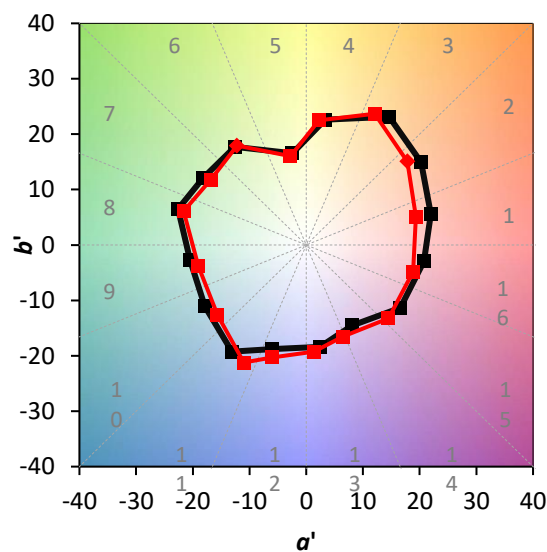
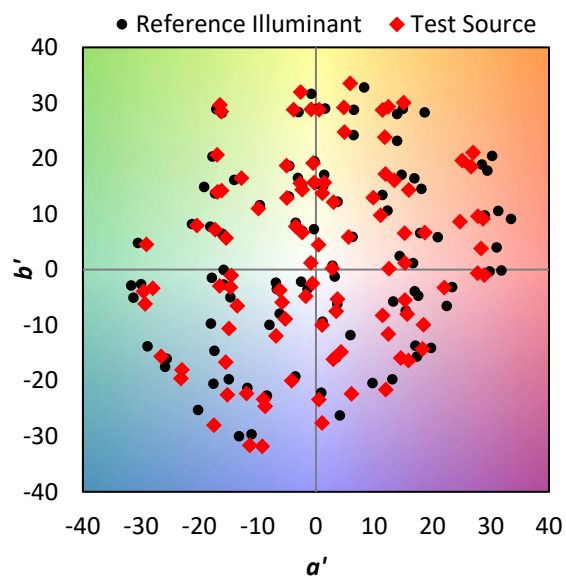
TM-30-18

Summary

$R_f = 85.3$
 $R_g = 94.4$
 CIE $R_a = 83.5$
 $R_g = 8.7$



Color Vector Graphics

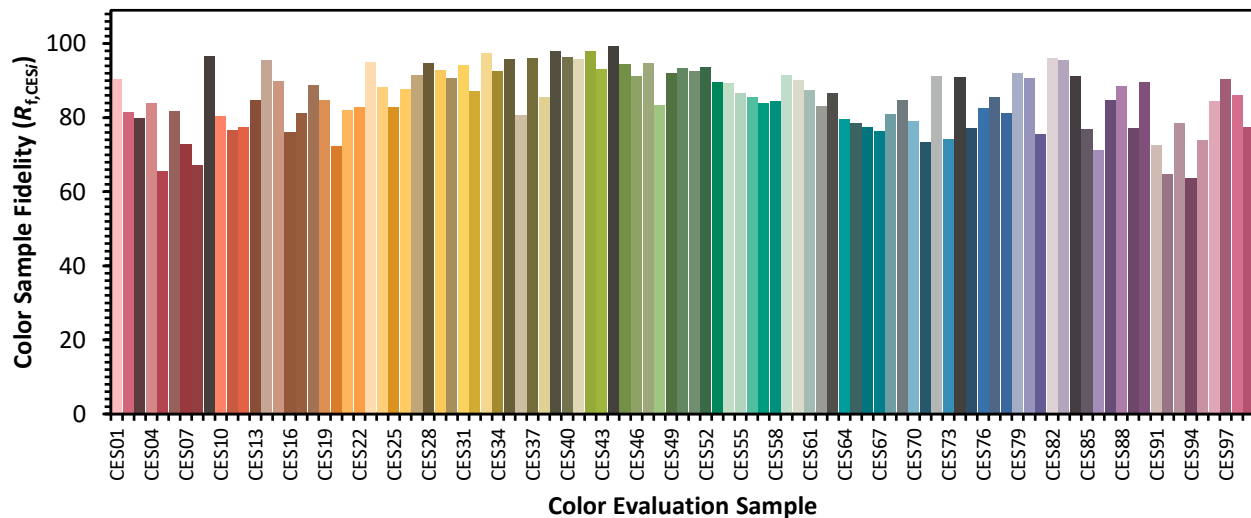


REPORT NUMBER: SP1-2210-820-6

TM-30-18

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

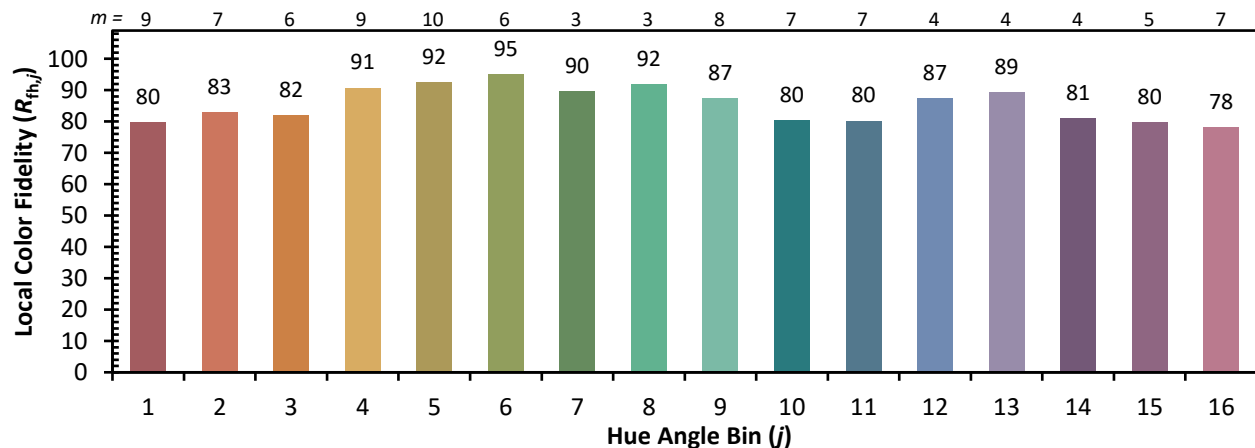
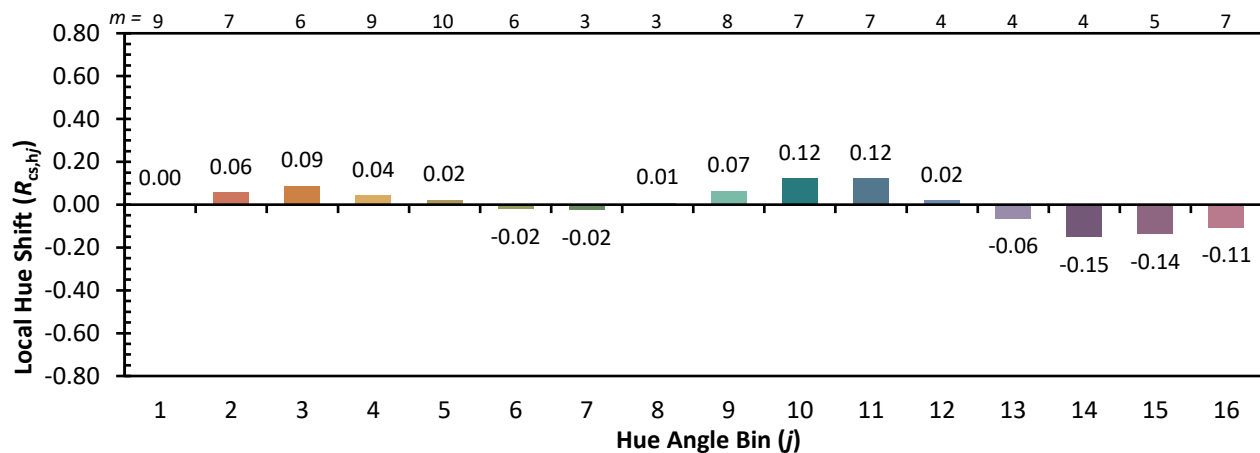
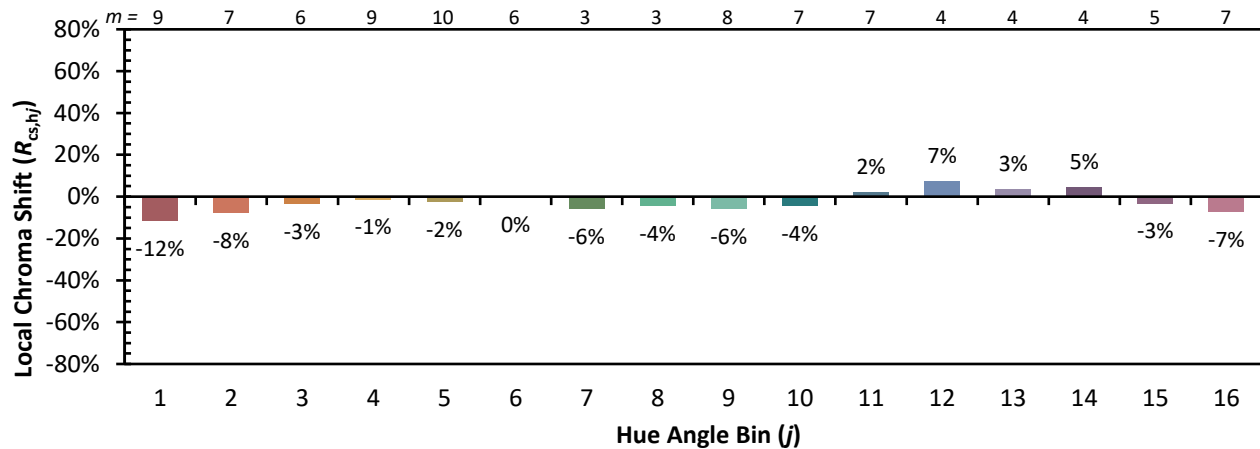
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CES03 = 31	CES28 = 95	CES53 = 90	CES78 = 81
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CES05 = 49	CES30 = 91	CES55 = 87	CES80 = 90
CES06 = 51	CES31 = 94	CES56 = 86	CES81 = 76
CES07 = 41	CES32 = 87	CES57 = 84	CES82 = 96
CES08 = 40	CES33 = 97	CES58 = 85	CES83 = 95
CES09 = 29	CES34 = 93	CES59 = 91	CES84 = 91
CES10 = 75	CES35 = 96	CES60 = 90	CES85 = 77
CES11 = 58	CES36 = 81	CES61 = 87	CES86 = 71
CES12 = 64	CES37 = 96	CES62 = 83	CES87 = 85
CES13 = 43	CES38 = 85	CES63 = 87	CES88 = 88
CES14 = 74	CES39 = 98	CES64 = 80	CES89 = 77
CES15 = 71	CES40 = 96	CES65 = 78	CES90 = 90
CES16 = 47	CES41 = 96	CES66 = 77	CES91 = 73
CES17 = 50	CES42 = 98	CES67 = 76	CES92 = 65
CES18 = 56	CES43 = 93	CES68 = 81	CES93 = 79
CES19 = 72	CES44 = 99	CES69 = 85	CES94 = 64
CES20 = 66	CES45 = 94	CES70 = 79	CES95 = 74
CES21 = 86	CES46 = 91	CES71 = 73	CES96 = 84
CES22 = 78	CES47 = 95	CES72 = 91	CES97 = 90
CES23 = 92	CES48 = 83	CES73 = 74	CES98 = 86
CES24 = 90	CES49 = 92	CES74 = 91	CES99 = 77
CES25 = 72	CES50 = 93	CES75 = 77	



REPORT NUMBER: SP1-2210-820-6

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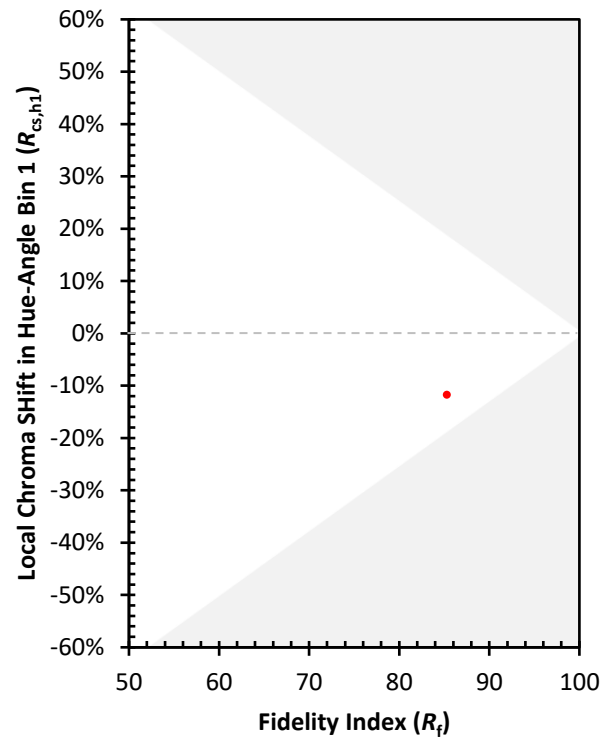
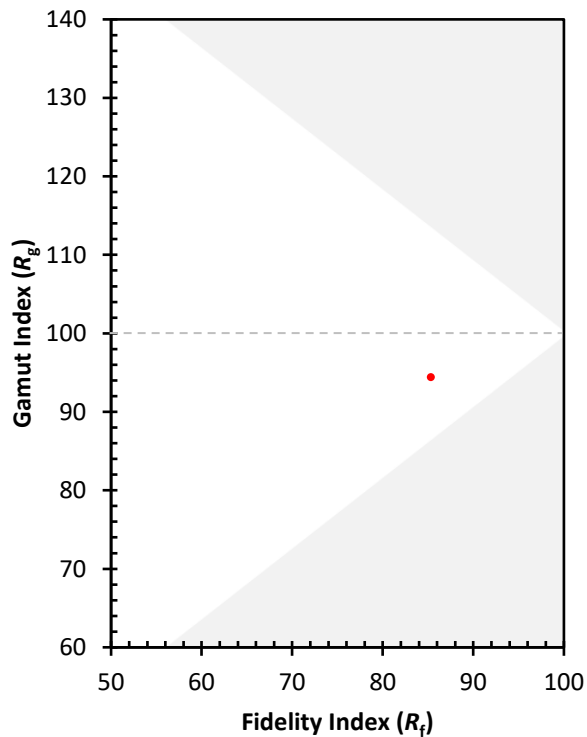
Color Rendition by Hue-Angle Bin



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Measure Comparisons



(END OF REPORT)