

Scaled data based on original data using  
LM-79-2019 Approved Method: Electrical and Photometric Measurements of Solid-  
State Lighting Products

Test Report Prepared for

Cooper Lighting Solutions

Brand: HALO COMMERCIAL

Report Number: P776780

Luminaire Tested: HCDJBL54050CSD-HCD82TRH-HCD82TRLWW-5000lm-2700K

Issue Date: 2/13/2024

**Test Information**

Test Method: LM-79-2019  
Report Number: P776780  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA ( A2312156B068)  
Test Lab:  
Issue Date: 2/13/2024  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: HALO COMMERCIAL  
Catalog Number: HCDJBS4050CSD-HCD82TRH-HCD82TRLWW-5000lm-2700K  
Description: 8 INCH ROUND NARROW LENSED WALLWASH KIT  
Light Source: SELECTABLE LUMENS AND CCT ARRAY 90CRI / 2700K CCT  
Ballast/Driver: -

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 5072.4 lumens  
Efficiency: N/A  
Efficacy: 105.7 lumens/watt  
Spacing Criteria (0/90/45): 1.11 / 1.08 / 1.14  
Luminous Opening: Circular (Dia: 0.67' x H: 0')  
CIE Type: Direct

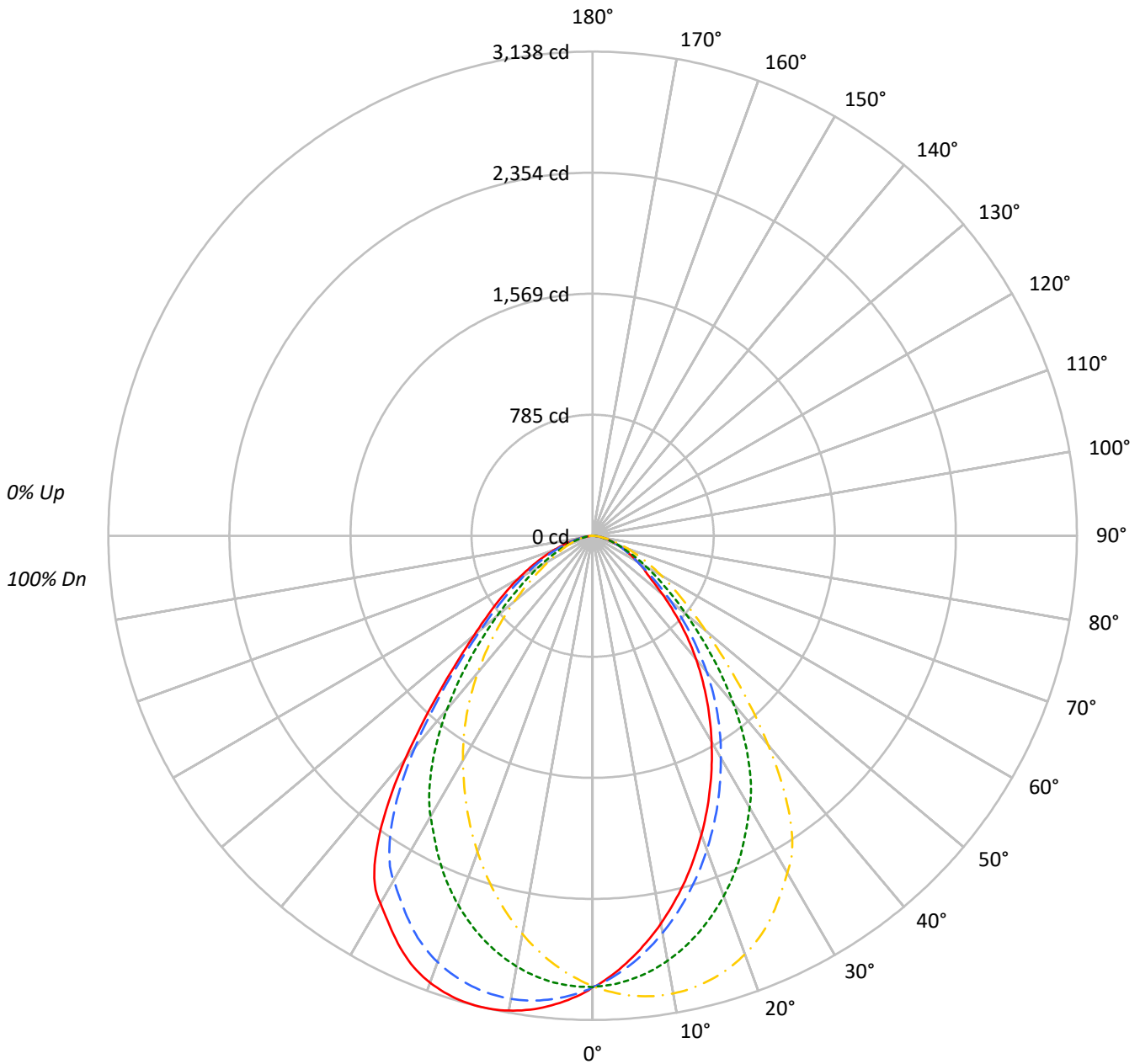
Input Watts (W): 48  
Input Voltage (V): NR  
Input Current (A<sub>in</sub>): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 24 FT



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### Luminous Intensity Polar Plot





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**COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:**

RF	20					20					20					20										
RC	80					70					50					30					10					0
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	50	30	10	50	30	10	0		
RCR																										
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100								
1	111	107	104	101	109	105	102	99	101	99	96	97	95	93	94	92	91	89								
2	103	96	91	86	101	95	90	85	91	87	83	88	85	82	85	82	80	78								
3	96	87	80	75	93	85	79	74	83	77	73	80	75	72	78	74	71	69								
4	89	79	71	66	87	77	71	65	75	69	64	73	68	64	71	66	63	61								
5	83	72	64	58	81	71	63	58	69	62	57	67	61	57	65	60	56	54								
6	77	66	58	52	75	65	57	52	63	56	52	61	56	51	60	55	51	49								
7	72	60	52	47	71	59	52	47	58	51	47	57	51	46	55	50	46	44								
8	68	56	48	43	66	55	48	43	54	47	42	52	47	42	51	46	42	40								
9	64	51	44	39	62	51	44	39	50	43	39	49	43	39	48	42	39	37								
10	60	48	41	36	59	47	41	36	46	40	36	46	40	36	45	39	35	34								

**AVERAGE LUMINANCE (cd/sqm):**

	0°	90°	180°	270°
0°	89319	89319	89319	89319
5°	84579	88432	93642	89048
10°	79087	86701	96873	87873
15°	73174	84104	99082	85747
20°	67000	80737	100130	82722
25°	60673	76576	99277	78725
30°	54339	71751	96971	74050
35°	47941	65447	90512	67586
40°	41528	56565	75253	58526
45°	34783	46682	59078	48219
50°	28071	37546	47611	38368
55°	23016	30292	40160	30484
60°	20504	24510	34084	24565
65°	17706	19816	28506	19715
70°	15336	15818	23021	15702
75°	13164	12575	17517	12421
80°	10901	10092	11287	9688
85°	7671	7671	3363	7006

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 180°  
 Vertical Angle: 45°  
 Luminance: 59078 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	274.5	5.4
10°-20°	760.5	15.0
20°-30°	1074.5	21.2
30°-40°	1129.6	22.3
40°-50°	851.7	16.8
50°-60°	527.9	10.4
60°-70°	296.9	5.9
70°-80°	131.1	2.6
80°-90°	26.0	0.5
90°-100°	0.0	0.0
100°-110°	0.0	0.0
110°-120°	0.0	0.0
120°-130°	0.0	0.0
130°-140°	0.0	0.0
140°-150°	0.0	0.0
150°-160°	0.0	0.0
160°-170°	0.0	0.0
170°-180°	0.0	0.0
0°-30°	2109.5	41.6
0°-40°	3239.0	63.9
0°-60°	4618.6	91.1
0°-90°	5072.4	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	5072.4	100.0

**CANDELA DISTRIBUTION:**

	0°	90°	180°	270°	360°	Flux
0°	2926	2926	2926	2926	2926	
5°	2760	2886	3056	2906	2760	257
15°	2315	2661	3135	2713	2315	648
25°	1801	2273	2947	2337	1801	826
35°	1286	1756	2428	1813	1286	803
45°	806	1081	1368	1117	806	622
55°	432	569	754	573	432	397
65°	245	274	395	273	245	245
75°	112	107	148	105	112	120
85°	22	22	10	20	22	27
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
0°	2925.6	2925.6	2925.6	2925.6	2925.6	2925.6	2925.6	2925.6	2925.6	2925.6	2925.6
0.5°	2916.1	2917.4	2917.0	2917.0	2921.5	2924.7	2927.9	2943.0	2946.1	2946.1	2939.8
1°	2900.6	2902.9	2905.1	2909.7	2919.7	2928.8	2937.0	2955.7	2959.8	2959.4	2949.8
1.5°	2884.6	2887.4	2892.8	2901.9	2917.4	2932.5	2946.1	2968.0	2973.9	2972.6	2960.3
2°	2867.8	2871.4	2879.6	2893.3	2914.7	2935.7	2954.3	2979.4	2987.1	2984.9	2969.4
2.5°	2850.9	2855.0	2866.4	2884.2	2911.1	2937.9	2961.6	2990.3	2999.5	2996.7	2978.9
3°	2833.6	2838.6	2851.8	2875.1	2907.0	2939.8	2968.9	3000.4	3012.2	3008.1	2986.7
3.5°	2815.8	2821.8	2838.2	2865.0	2902.9	2941.1	2975.8	3010.8	3023.6	3019.0	2994.4
4°	2797.6	2804.0	2823.1	2855.0	2897.4	2942.0	2981.7	3020.0	3034.5	3029.5	3001.7
4.5°	2778.9	2785.8	2807.6	2844.1	2891.9	2942.5	2987.6	3029.1	3045.0	3039.1	3009.0
5°	2759.8	2768.0	2791.7	2832.7	2885.5	2942.0	2992.2	3037.3	3055.5	3048.7	3014.9
5.5°	2740.7	2749.3	2776.2	2820.8	2879.2	2941.6	2996.7	3045.0	3065.1	3057.3	3020.9
6°	2721.1	2729.7	2759.3	2808.1	2871.9	2939.8	3000.8	3052.3	3073.7	3065.5	3025.9
6.5°	2701.0	2710.1	2742.5	2795.3	2864.1	2937.9	3004.0	3058.7	3081.9	3073.3	3030.9
7°	2680.1	2690.5	2724.7	2782.1	2856.4	2935.7	3006.7	3065.1	3090.1	3080.1	3034.5
7.5°	2660.0	2670.9	2707.4	2768.4	2847.3	2932.9	3009.0	3070.5	3097.4	3086.9	3038.2
8°	2638.6	2650.0	2689.2	2754.3	2838.2	2928.8	3010.8	3075.5	3104.2	3092.9	3040.9
8.5°	2617.2	2629.5	2670.9	2739.7	2828.6	2925.2	3011.8	3079.6	3110.2	3098.3	3043.2
9°	2594.8	2608.1	2651.3	2724.7	2818.1	2920.6	3012.2	3083.7	3115.6	3102.9	3045.5
9.5°	2573.4	2586.6	2632.7	2709.2	2807.6	2915.6	3012.2	3086.9	3120.7	3107.0	3046.4
10°	2551.1	2564.8	2613.1	2692.8	2796.7	2909.7	3011.8	3089.2	3124.8	3110.6	3047.3
10.5°	2528.3	2542.9	2593.0	2677.3	2784.8	2903.3	3010.8	3091.5	3128.4	3113.8	3047.3
11°	2505.5	2520.6	2572.5	2660.5	2772.5	2896.9	3009.0	3092.9	3131.6	3116.1	3046.8
11.5°	2482.8	2498.3	2552.5	2643.1	2760.2	2889.6	3007.2	3093.8	3134.3	3118.4	3045.5
12°	2459.5	2475.0	2531.5	2625.4	2747.5	2882.4	3004.5	3093.8	3136.1	3119.3	3044.1
12.5°	2435.4	2452.2	2510.1	2608.1	2733.8	2874.2	3000.8	3093.8	3137.5	3120.2	3041.8
13°	2411.2	2428.5	2488.7	2589.4	2720.1	2865.5	2997.2	3092.9	3138.4	3120.2	3039.1
13.5°	2388.0	2404.8	2467.3	2571.6	2706.5	2856.4	2992.6	3091.5	3138.4	3119.7	3035.9
14°	2363.8	2381.6	2445.4	2552.5	2691.0	2846.8	2987.6	3089.2	3138.0	3118.4	3031.8
14.5°	2339.2	2357.5	2423.1	2533.3	2675.9	2836.3	2982.1	3086.9	3136.6	3116.5	3027.2
15°	2315.1	2333.8	2400.3	2513.7	2660.9	2825.9	2976.2	3083.3	3134.8	3114.3	3022.2
15.5°	2289.6	2309.2	2377.5	2493.7	2645.0	2814.5	2969.4	3079.6	3132.5	3111.5	3016.8
16°	2265.0	2284.6	2354.7	2473.6	2628.6	2803.1	2962.5	3075.1	3129.3	3107.9	3010.4
16.5°	2239.9	2260.0	2331.9	2453.6	2611.7	2790.8	2954.8	3070.1	3126.1	3103.8	3003.6
17°	2214.8	2235.8	2309.2	2432.6	2594.8	2778.5	2946.6	3064.6	3121.6	3098.8	2996.3
17.5°	2189.3	2210.7	2285.0	2412.1	2577.5	2765.7	2937.9	3058.2	3116.5	3093.3	2988.1
18°	2163.8	2185.7	2261.8	2390.3	2559.8	2752.0	2928.8	3051.4	3111.1	3086.9	2979.9
18.5°	2138.3	2160.2	2237.6	2369.3	2541.1	2738.4	2918.8	3043.6	3104.7	3080.1	2970.7
19°	2113.2	2135.1	2213.9	2347.4	2522.9	2723.8	2908.3	3035.4	3097.9	3072.8	2960.7
19.5°	2086.8	2109.6	2189.8	2325.6	2504.2	2709.2	2897.4	3026.8	3090.6	3064.6	2950.2
20°	2062.2	2084.5	2165.2	2303.7	2485.0	2693.7	2886.0	3017.2	3081.9	3055.0	2939.3
20.5°	2035.8	2059.5	2141.0	2280.9	2465.0	2678.2	2874.2	3007.2	3072.8	3045.5	2927.9
21°	2010.3	2034.0	2116.4	2258.1	2445.4	2661.8	2860.9	2996.3	3062.8	3035.4	2915.2



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**CANDELA DISTRIBUTION (continued):**

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
22.5°	1931.9	1956.5	2042.2	2189.3	2383.9	2609.9	2819.5	2958.4	3027.2	2998.5	2873.2
23°	1905.9	1931.0	2017.1	2165.6	2362.5	2591.7	2804.0	2943.9	3013.6	2984.4	2857.7
23.5°	1880.0	1904.6	1991.6	2141.9	2340.6	2573.0	2787.6	2928.8	2998.5	2969.4	2841.3
24°	1854.0	1879.0	1967.4	2118.3	2318.7	2553.4	2770.7	2911.5	2982.6	2952.5	2823.6
24.5°	1827.6	1853.1	1941.5	2094.1	2296.4	2532.9	2752.5	2893.7	2965.3	2935.2	2804.9
25°	1801.1	1827.1	1916.4	2069.5	2273.2	2511.9	2733.4	2875.1	2947.1	2916.5	2785.3
25.5°	1775.2	1800.7	1890.9	2044.9	2249.0	2489.6	2713.3	2856.4	2928.4	2898.3	2765.3
26°	1749.2	1775.6	1865.4	2020.3	2225.8	2467.3	2692.8	2835.9	2909.2	2877.8	2744.3
26.5°	1723.2	1749.6	1839.9	1995.7	2201.2	2444.0	2671.4	2815.4	2889.6	2858.2	2723.8
27°	1697.7	1723.7	1814.8	1970.6	2176.6	2421.7	2650.4	2795.3	2869.6	2838.6	2702.4
27.5°	1671.3	1697.7	1789.3	1945.1	2152.9	2398.9	2629.0	2775.7	2849.5	2818.1	2681.4
28°	1644.8	1672.2	1763.3	1920.0	2128.7	2376.1	2608.1	2754.8	2829.0	2797.6	2660.5
28.5°	1618.4	1645.8	1737.8	1895.0	2105.0	2352.9	2585.7	2734.7	2809.5	2778.0	2640.0
29°	1592.9	1620.2	1713.2	1870.4	2081.3	2330.6	2564.8	2714.2	2788.9	2757.5	2618.5
29.5°	1567.4	1594.3	1687.7	1845.8	2058.1	2308.3	2543.4	2694.6	2769.4	2737.5	2598.0
30°	1541.4	1568.8	1662.2	1822.1	2035.3	2286.4	2522.9	2675.5	2750.7	2718.8	2578.9
30.5°	1515.0	1543.2	1637.1	1797.5	2011.6	2264.5	2502.8	2657.3	2732.9	2701.0	2559.8
31°	1489.5	1517.7	1613.0	1773.8	1988.4	2243.1	2483.7	2637.2	2713.3	2680.5	2537.9
31.5°	1464.0	1492.2	1588.3	1748.7	1962.9	2218.5	2460.9	2612.6	2690.1	2656.8	2512.8
32°	1438.4	1467.1	1563.3	1724.1	1936.5	2192.5	2435.4	2584.4	2662.7	2629.0	2483.7
32.5°	1412.0	1441.2	1538.7	1697.7	1908.2	2162.9	2406.7	2554.3	2631.8	2597.6	2452.7
33°	1387.0	1416.6	1513.2	1672.2	1879.5	2132.8	2375.7	2519.2	2596.7	2563.0	2419.4
33.5°	1362.4	1392.0	1488.6	1644.8	1849.0	2100.0	2341.5	2482.3	2558.9	2525.6	2383.0
34°	1336.8	1366.9	1462.6	1616.6	1818.4	2066.8	2306.0	2441.3	2517.8	2485.9	2345.6
34.5°	1311.8	1342.3	1436.6	1588.8	1787.5	2032.1	2267.7	2399.4	2474.6	2443.6	2306.4
35°	1286.3	1317.2	1410.6	1561.0	1756.0	1995.7	2228.5	2353.4	2428.5	2398.0	2266.3
35.5°	1261.2	1292.2	1384.7	1532.3	1723.2	1959.7	2186.6	2306.4	2379.8	2352.4	2224.0
36°	1237.1	1267.1	1358.7	1503.6	1690.9	1922.8	2144.7	2257.2	2329.2	2303.7	2179.3
36.5°	1212.0	1242.5	1332.7	1474.4	1657.1	1884.5	2101.8	2208.0	2277.3	2253.1	2133.7
37°	1187.8	1217.9	1306.8	1446.2	1623.9	1845.3	2055.4	2155.2	2224.0	2201.2	2087.7
37.5°	1162.8	1192.9	1279.9	1417.0	1590.2	1806.6	2009.8	2102.3	2169.7	2147.4	2039.9
38°	1138.6	1168.3	1253.9	1387.4	1555.5	1766.5	1962.0	2049.5	2114.6	2093.6	1991.6
38.5°	1114.0	1142.7	1227.5	1357.3	1521.8	1727.3	1914.6	1998.4	2059.0	2039.4	1941.9
39°	1089.9	1118.6	1201.1	1328.2	1489.0	1686.8	1867.2	1942.8	2001.6	1984.3	1892.3
39.5°	1066.2	1094.0	1175.1	1299.0	1454.4	1645.8	1818.9	1889.5	1944.7	1927.8	1842.1
40°	1042.0	1069.4	1147.7	1269.4	1419.3	1604.7	1770.6	1834.8	1888.2	1872.2	1791.6
40.5°	1017.9	1044.8	1121.8	1238.9	1385.1	1564.2	1721.4	1782.9	1831.2	1817.1	1740.5
41°	994.2	1020.6	1095.3	1209.7	1350.5	1523.2	1674.0	1729.1	1776.5	1762.4	1690.4
41.5°	970.0	996.5	1069.8	1180.6	1316.8	1481.7	1626.6	1675.8	1720.0	1707.7	1640.3
42°	945.9	972.3	1043.9	1151.4	1282.2	1441.2	1579.7	1624.8	1666.7	1653.5	1591.1
42.5°	922.7	948.6	1017.9	1123.1	1248.0	1400.6	1533.7	1574.7	1613.4	1600.6	1542.3
43°	899.0	924.9	993.3	1094.4	1214.3	1361.4	1487.2	1525.5	1561.5	1550.1	1494.0
43.5°	875.7	901.2	968.2	1066.2	1180.1	1321.8	1442.1	1477.2	1510.4	1498.6	1446.2



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**CANDELA DISTRIBUTION (continued):**

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
45°	805.6	831.5	894.0	982.4	1081.2	1206.5	1313.1	1340.0	1368.3	1357.8	1312.2
45.5°	782.8	807.8	869.8	955.5	1049.3	1170.1	1272.1	1297.7	1324.1	1312.7	1268.9
46°	760.5	785.5	845.7	929.0	1017.9	1134.5	1232.5	1256.2	1281.7	1270.8	1227.0
46.5°	738.6	763.6	822.9	902.6	987.4	1098.5	1193.8	1215.6	1240.7	1229.3	1186.5
47°	716.3	740.9	798.7	875.3	956.8	1063.5	1155.9	1178.3	1202.0	1190.1	1148.7
47.5°	694.4	719.9	775.5	850.7	927.2	1030.2	1119.5	1141.8	1165.5	1152.8	1111.3
48°	673.0	698.5	752.7	824.7	899.0	998.8	1084.4	1106.7	1130.0	1117.7	1075.3
48.5°	652.0	677.5	729.9	799.6	871.6	966.9	1051.2	1073.0	1095.3	1082.6	1040.2
49°	630.6	657.5	708.1	775.0	843.8	935.4	1017.9	1041.1	1063.9	1050.7	1007.9
49.5°	611.5	637.4	685.7	751.3	816.5	906.7	986.9	1009.7	1032.5	1017.9	975.1
50°	591.0	617.4	664.3	727.2	790.5	878.0	956.4	980.1	1002.4	988.3	944.5
50.5°	571.4	598.7	642.9	703.5	765.5	849.8	926.3	950.9	973.2	958.7	914.9
51°	552.7	579.1	622.4	680.7	740.9	822.4	898.1	923.6	945.4	930.4	886.7
51.5°	534.9	560.9	601.9	658.8	717.2	796.5	871.2	896.7	919.0	904.0	859.3
52°	517.1	542.2	581.4	637.4	693.9	770.9	844.3	871.6	893.0	877.6	832.9
52.5°	500.3	524.9	562.3	616.0	671.6	747.2	818.8	846.1	868.4	852.0	806.9
53°	484.8	507.6	543.1	595.1	649.7	723.1	793.7	822.4	844.3	827.9	782.3
53.5°	469.8	490.7	524.4	575.0	628.8	699.9	770.0	799.2	821.1	804.2	758.2
54°	456.1	474.3	506.2	555.4	608.3	677.1	746.8	776.4	798.7	781.4	735.9
54.5°	443.8	458.8	488.4	537.2	588.7	656.1	724.0	754.5	776.4	759.1	713.5
55°	432.4	444.2	471.6	518.5	569.1	634.7	702.6	733.1	754.5	737.7	691.7
55.5°	421.9	429.7	455.2	501.2	550.4	614.2	681.6	712.2	733.6	716.7	670.7
56°	412.4	416.5	439.2	483.4	531.7	594.6	660.7	692.1	712.6	696.7	650.2
56.5°	405.1	403.7	424.2	467.0	514.0	575.0	640.6	672.1	692.1	675.7	630.1
57°	396.4	391.8	409.2	450.6	496.2	555.9	621.0	652.5	672.1	656.1	611.0
57.5°	386.4	380.9	395.0	434.7	479.3	537.7	601.9	633.8	652.5	637.4	592.3
58°	376.4	371.8	381.4	419.2	462.9	520.3	583.2	614.7	632.9	618.8	574.1
58.5°	366.3	362.7	368.2	404.6	447.0	503.0	565.4	596.0	613.3	599.6	555.4
59°	356.3	353.6	355.4	390.0	431.5	486.2	547.2	577.7	594.6	580.9	538.1
59.5°	345.8	344.0	343.5	375.9	416.5	469.8	529.9	559.5	575.9	562.7	520.8
60°	335.8	334.9	331.7	362.2	401.4	453.8	513.0	542.2	558.2	545.4	503.9
60.5°	325.8	325.3	320.8	349.0	387.7	438.8	495.7	524.9	539.9	527.6	487.5
61°	316.2	315.8	309.8	335.8	374.1	423.3	479.3	508.0	522.6	510.8	471.1
61.5°	306.6	306.6	299.4	323.5	360.0	408.2	463.4	491.2	505.3	494.4	455.6
62°	297.5	297.5	289.8	311.2	346.3	394.6	448.3	474.8	488.4	478.4	440.1
62.5°	288.0	288.4	280.2	299.4	334.0	380.5	432.9	458.4	472.0	461.1	425.1
63°	279.3	279.8	271.1	288.0	321.2	366.8	417.8	442.9	455.6	445.6	410.5
63.5°	270.2	271.1	262.4	277.0	308.9	353.1	403.2	427.8	439.7	430.1	396.4
64°	262.0	262.4	254.7	266.5	297.1	339.4	389.1	412.4	424.2	415.1	382.3
64.5°	253.3	254.2	247.0	256.5	285.2	326.7	375.0	398.2	409.2	400.5	368.6
65°	245.1	246.5	239.7	246.5	274.3	314.4	360.9	384.1	394.6	386.4	354.5
65.5°	237.4	238.3	232.4	236.9	263.4	302.1	347.2	370.0	380.0	372.3	340.4
66°	229.2	230.6	225.1	227.8	252.4	289.8	334.4	355.9	365.9	358.1	327.6





TEST NUMBER: P776780

CATALOG NUMBER: HCDJBL54050CSD-HCD82TRH-HCD82TRLWW-5000lm-2700K

**CANDELA DISTRIBUTION (continued):**

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
67.5°	206.4	208.2	203.7	201.8	222.4	256.1	296.6	314.8	322.6	316.7	289.8
68°	199.6	200.9	197.3	194.1	212.3	245.1	284.3	301.6	308.9	303.5	277.5
68.5°	192.3	193.6	190.5	186.4	203.2	234.7	272.0	289.3	296.2	291.2	266.1
69°	185.4	186.8	183.6	179.1	194.6	224.2	260.6	276.6	282.9	278.4	254.2
69.5°	178.2	180.0	177.2	171.8	185.9	214.6	249.2	264.7	270.6	266.1	243.3
70°	171.8	173.1	170.9	164.5	177.2	205.0	238.3	252.9	257.9	254.2	232.4
70.5°	164.9	166.8	164.0	158.1	169.5	195.5	227.4	241.5	246.0	243.3	221.9
71°	158.6	160.4	158.1	152.2	161.3	186.4	217.3	230.1	234.2	231.5	211.0
71.5°	152.6	154.5	152.6	146.3	154.0	177.2	206.9	219.6	222.8	220.5	200.9
72°	146.7	148.5	146.7	140.3	146.3	168.6	196.8	208.2	211.0	209.6	190.9
72.5°	140.3	142.2	141.2	134.0	139.0	160.4	186.8	198.2	200.0	198.7	180.9
73°	134.4	136.2	135.3	128.5	132.1	152.2	177.2	187.7	189.1	188.6	171.3
73.5°	128.5	130.3	129.4	123.0	125.3	144.0	167.7	177.7	178.6	178.6	162.7
74°	123.0	124.4	123.9	118.0	118.9	136.2	159.0	168.1	168.6	169.0	153.5
74.5°	117.1	118.9	118.5	112.5	112.5	128.9	149.9	159.0	158.1	159.5	144.4
75°	111.6	113.5	113.5	107.5	106.6	121.7	141.2	149.4	148.5	149.9	136.2
75.5°	106.2	108.0	108.0	103.0	101.2	114.8	133.0	140.8	139.0	141.2	128.0
76°	101.2	102.5	103.0	98.0	95.2	108.0	124.8	132.1	129.4	132.6	119.8
76.5°	95.7	97.5	98.0	93.4	90.2	101.2	117.1	123.5	120.3	123.9	112.1
77°	90.7	92.0	92.9	88.8	84.7	95.2	109.8	115.3	111.6	115.7	104.8
77.5°	85.7	87.0	87.9	84.3	79.7	88.8	102.1	107.5	103.0	108.0	97.5
78°	80.6	82.5	83.4	79.7	75.2	83.4	95.2	99.8	94.8	100.2	90.2
78.5°	76.1	77.5	78.4	75.6	70.2	77.5	88.4	92.5	86.6	92.5	83.8
79°	71.1	72.9	73.8	71.1	66.1	72.0	81.6	85.2	78.8	85.7	77.0
79.5°	66.5	68.3	69.3	67.0	61.5	67.0	75.2	78.4	71.5	78.4	71.1
80°	62.0	63.3	64.7	62.9	57.4	62.0	68.8	71.5	64.2	72.0	64.7
80.5°	57.9	58.8	60.6	58.8	53.3	57.0	63.3	64.7	57.4	65.2	58.8
81°	53.3	54.7	56.5	55.1	49.2	52.4	57.4	58.3	50.6	58.8	53.3
81.5°	49.2	50.6	52.4	51.0	45.6	47.8	51.9	51.9	44.7	52.9	47.8
82°	45.1	46.0	48.3	47.4	41.9	43.3	46.9	46.5	38.7	47.4	43.3
82.5°	41.0	41.9	44.2	43.3	38.3	39.6	42.4	41.0	33.3	41.9	38.7
83°	36.9	38.3	40.6	39.6	35.1	36.0	37.8	35.5	27.3	36.5	33.7
83.5°	32.8	34.2	36.5	36.5	31.9	31.9	33.3	30.1	21.4	31.0	29.2
84°	29.2	30.1	32.8	32.8	28.2	28.2	28.7	24.6	16.9	25.5	24.6
84.5°	25.5	26.4	29.2	29.2	25.1	24.6	24.1	19.6	12.8	20.0	21.0
85°	21.9	22.8	25.5	26.0	21.9	21.4	20.5	15.5	9.6	15.5	17.3
85.5°	18.2	18.7	22.3	22.3	18.7	18.2	17.3	12.3	7.3	12.3	14.1
86°	15.5	16.4	19.1	19.1	15.9	15.0	14.1	9.1	5.9	9.1	10.9
86.5°	12.8	13.7	15.9	16.4	13.2	12.3	10.9	6.4	4.6	6.4	8.2
87°	10.0	10.9	13.2	13.2	10.5	9.6	8.2	4.1	3.2	4.1	5.9
87.5°	7.3	8.2	10.5	10.5	7.7	6.8	5.9	2.3	2.3	2.3	3.6
88°	5.0	5.9	7.7	7.3	5.5	4.6	3.6	0.9	0.9	0.9	1.8
88.5°	3.2	3.6	4.6	4.6	2.7	2.3	1.8	0.5	0.5	0.5	0.5



TEST NUMBER: P776780

CATALOG NUMBER: HCDJBL54050CSD-HCD82TRH-HCD82TRLWW-5000lm-2700K

**CANDELA DISTRIBUTION (continued):**

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
90°	0.0	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0



TEST NUMBER: P776780

CATALOG NUMBER: HCDJBL54050CSD-HCD82TRH-HCD82TRLWW-5000lm-2700K

**CANDELA DISTRIBUTION (continued):**

	247.5°	270°	292.5°	315°	337.5°	360°
0°	2925.6	2925.6	2925.6	2925.6	2925.6	2925.6
0.5°	2930.2	2923.8	2915.2	2907.4	2916.5	2916.1
1°	2935.7	2923.8	2909.2	2896.9	2902.4	2900.6
1.5°	2940.7	2923.8	2902.9	2885.5	2887.8	2884.6
2°	2945.7	2922.4	2896.0	2873.2	2872.8	2867.8
2.5°	2949.8	2921.1	2888.3	2860.5	2857.3	2850.9
3°	2953.4	2918.8	2880.5	2848.2	2841.3	2833.6
3.5°	2956.2	2916.1	2871.9	2835.0	2825.4	2815.8
4°	2958.9	2913.3	2863.2	2821.3	2808.5	2797.6
4.5°	2960.7	2909.7	2853.6	2806.7	2791.2	2778.9
5°	2961.6	2905.6	2844.1	2791.7	2773.9	2759.8
5.5°	2962.5	2901.0	2833.1	2776.6	2755.7	2740.7
6°	2963.0	2895.6	2822.7	2761.2	2737.5	2721.1
6.5°	2962.5	2889.6	2811.3	2744.8	2718.8	2701.0
7°	2961.6	2883.7	2799.0	2728.8	2699.2	2680.1
7.5°	2960.3	2876.4	2786.7	2711.0	2680.1	2660.0
8°	2958.4	2869.1	2773.9	2694.2	2660.0	2638.6
8.5°	2956.2	2861.4	2760.2	2675.9	2640.0	2617.2
9°	2953.0	2852.7	2746.1	2658.2	2619.0	2594.8
9.5°	2949.3	2843.6	2731.5	2639.0	2598.0	2573.4
10°	2945.2	2834.5	2717.0	2620.8	2577.1	2551.1
10.5°	2940.7	2824.5	2701.9	2601.2	2555.7	2528.3
11°	2935.2	2813.6	2686.4	2582.1	2533.8	2505.5
11.5°	2929.7	2802.6	2670.0	2561.6	2511.5	2482.8
12°	2922.9	2791.2	2653.6	2541.5	2489.1	2459.5
12.5°	2916.5	2779.4	2636.8	2521.0	2466.4	2435.4
13°	2908.8	2767.1	2619.9	2500.1	2443.6	2411.2
13.5°	2901.0	2754.3	2602.1	2479.1	2420.8	2388.0
14°	2892.4	2741.1	2583.9	2457.2	2397.1	2363.8
14.5°	2883.7	2727.4	2565.2	2435.4	2373.9	2339.2
15°	2874.2	2712.9	2547.0	2414.0	2349.7	2315.1
15.5°	2864.1	2698.3	2527.4	2390.7	2325.6	2289.6
16°	2853.6	2682.8	2508.3	2368.4	2301.4	2265.0
16.5°	2842.7	2667.7	2488.7	2345.2	2276.8	2239.9
17°	2830.9	2651.3	2468.2	2322.8	2252.7	2214.8
17.5°	2819.0	2634.9	2448.1	2300.1	2228.1	2189.3
18°	2806.3	2618.1	2427.2	2275.9	2203.5	2163.8
18.5°	2793.5	2600.8	2406.2	2252.2	2178.4	2138.3
19°	2779.4	2583.0	2384.8	2229.0	2152.9	2113.2
19.5°	2765.3	2565.2	2363.4	2205.3	2127.8	2086.8
20°	2750.7	2546.1	2341.5	2181.1	2102.8	2062.2
20.5°	2735.2	2527.9	2319.6	2156.5	2077.7	2035.8
21°	2719.7	2508.3	2296.9	2132.4	2052.2	2010.3

TEST NUMBER: P776780

CATALOG NUMBER: HCDJBL54050CSD-HCD82TRH-HCD82TRLWW-5000lm-2700K

**CANDELA DISTRIBUTION (continued):**

	247.5°	270°	292.5°	315°	337.5°	360°
22.5°	2669.1	2448.1	2228.5	2058.6	1975.6	1931.9
23°	2650.9	2426.7	2204.8	2033.5	1949.2	1905.9
23.5°	2631.3	2405.3	2181.1	2008.9	1924.2	1880.0
24°	2611.7	2383.4	2157.0	1982.9	1898.6	1854.0
24.5°	2590.7	2360.6	2132.8	1958.8	1872.2	1827.6
25°	2568.9	2337.0	2108.2	1932.8	1846.2	1801.1
25.5°	2547.0	2313.7	2083.6	1907.3	1820.7	1775.2
26°	2524.2	2290.0	2058.6	1882.2	1794.7	1749.2
26.5°	2501.9	2265.4	2033.5	1857.2	1768.8	1723.2
27°	2479.6	2240.8	2008.0	1831.2	1743.3	1697.7
27.5°	2456.8	2217.1	1982.9	1805.2	1716.8	1671.3
28°	2434.0	2193.4	1957.9	1779.7	1691.3	1644.8
28.5°	2411.7	2169.3	1933.7	1755.1	1664.9	1618.4
29°	2389.8	2146.0	1909.1	1729.6	1639.8	1592.9
29.5°	2368.4	2123.3	1885.4	1705.0	1613.9	1567.4
30°	2347.4	2100.5	1861.3	1679.5	1588.3	1541.4
30.5°	2325.6	2077.7	1836.7	1654.9	1562.8	1515.0
31°	2301.0	2053.1	1811.6	1630.3	1537.8	1489.5
31.5°	2275.0	2027.6	1787.0	1605.2	1512.3	1464.0
32°	2245.8	1999.3	1760.6	1580.1	1486.7	1438.4
32.5°	2214.8	1970.2	1733.7	1554.6	1461.2	1412.0
33°	2182.0	1941.0	1706.4	1529.1	1436.6	1387.0
33.5°	2148.3	1909.6	1678.6	1503.6	1411.6	1362.4
34°	2113.2	1878.1	1649.9	1477.6	1386.5	1336.8
34.5°	2077.7	1846.2	1620.7	1451.2	1361.4	1311.8
35°	2041.2	1813.4	1591.5	1424.8	1336.8	1286.3
35.5°	2003.4	1780.6	1562.4	1397.9	1311.3	1261.2
36°	1965.2	1746.9	1532.8	1371.9	1286.7	1237.1
36.5°	1925.5	1713.6	1503.1	1345.0	1261.7	1212.0
37°	1885.4	1679.0	1472.6	1317.7	1236.6	1187.8
37.5°	1844.9	1644.8	1443.0	1290.8	1211.5	1162.8
38°	1803.9	1609.3	1412.5	1263.9	1186.5	1138.6
38.5°	1762.9	1574.7	1382.4	1237.1	1161.4	1114.0
39°	1721.4	1539.1	1352.8	1210.6	1136.4	1089.9
39.5°	1679.5	1504.1	1321.8	1183.7	1111.8	1066.2
40°	1635.7	1468.5	1291.7	1156.9	1087.1	1042.0
40.5°	1592.9	1432.5	1261.7	1130.4	1062.1	1017.9
41°	1551.0	1396.5	1231.6	1104.0	1037.5	994.2
41.5°	1508.2	1361.0	1201.5	1077.1	1012.4	970.0
42°	1465.8	1325.9	1171.9	1051.6	988.3	945.9
42.5°	1422.5	1289.4	1142.7	1026.1	964.1	922.7
43°	1380.6	1254.8	1113.1	999.7	940.4	899.0
43.5°	1339.1	1219.7	1083.0	973.7	916.7	875.7

TEST NUMBER: P776780

CATALOG NUMBER: HCDJBL54050CSD-HCD82TRH-HCD82TRLWW-5000lm-2700K

**CANDELA DISTRIBUTION (continued):**

	247.5°	270°	292.5°	315°	337.5°	360°
45°	1218.8	1116.8	996.9	898.1	845.2	805.6
45.5°	1179.2	1082.6	968.2	873.0	822.4	782.8
46°	1142.3	1049.8	940.4	848.8	799.2	760.5
46.5°	1104.0	1017.0	912.6	824.7	776.9	738.6
47°	1068.0	985.5	885.3	800.1	754.5	716.3
47.5°	1032.9	953.6	858.0	775.9	732.7	694.4
48°	999.7	923.1	832.0	752.7	711.2	673.0
48.5°	965.9	893.0	805.6	729.0	689.4	652.0
49°	933.6	864.3	780.0	706.7	668.9	630.6
49.5°	903.1	836.1	754.5	683.9	648.4	611.5
50°	873.5	807.8	729.9	661.6	627.9	591.0
50.5°	843.8	780.5	705.3	639.3	608.3	571.4
51°	816.5	754.5	682.1	618.3	587.8	552.7
51.5°	790.1	729.5	658.8	596.9	569.1	534.9
52°	764.1	704.9	636.5	577.3	550.4	517.1
52.5°	738.6	681.2	614.7	556.8	531.7	500.3
53°	714.4	657.9	593.2	537.2	513.5	484.8
53.5°	690.7	635.6	572.7	518.1	495.7	469.8
54°	668.9	614.2	552.2	499.8	478.4	456.1
54.5°	647.0	593.7	533.1	481.6	462.0	443.8
55°	625.6	572.7	514.4	464.3	446.5	432.4
55.5°	605.5	553.6	496.2	447.4	431.5	421.9
56°	585.5	534.9	478.4	431.5	416.9	412.4
56.5°	566.4	516.2	461.1	416.0	403.2	405.1
57°	547.7	498.0	444.7	400.5	390.9	396.4
57.5°	529.4	481.2	428.8	386.4	378.6	386.4
58°	512.1	464.7	413.3	372.7	367.7	376.4
58.5°	494.8	448.3	398.2	359.5	357.7	366.3
59°	478.0	431.9	383.6	346.7	348.6	356.3
59.5°	462.0	417.4	369.5	334.0	339.9	345.8
60°	446.1	402.3	355.9	322.6	330.8	335.8
60.5°	430.6	387.7	342.6	311.2	321.7	325.8
61°	415.5	372.7	329.9	300.3	312.6	316.2
61.5°	401.4	359.5	317.1	289.8	303.5	306.6
62°	387.3	346.3	304.8	280.2	294.8	297.5
62.5°	373.6	333.5	293.4	270.2	285.7	288.0
63°	359.5	320.3	282.0	261.1	277.0	279.3
63.5°	345.8	308.0	271.1	252.4	268.8	270.2
64°	332.6	296.2	260.2	243.8	260.2	262.0
64.5°	320.3	284.3	250.1	235.6	252.4	253.3
65°	307.1	272.9	240.1	228.3	244.2	245.1
65.5°	295.3	262.0	230.6	221.0	236.5	237.4
66°	283.4	251.1	221.4	214.1	228.7	229.2



TEST NUMBER: P776780

CATALOG NUMBER: HCDJBL54050CSD-HCD82TRH-HCD82TRLWW-5000lm-2700K

**CANDELA DISTRIBUTION (continued):**

	247.5°	270°	292.5°	315°	337.5°	360°
67.5°	249.7	221.0	195.5	193.6	205.9	206.4
68°	239.2	211.4	187.3	187.3	199.1	199.6
68.5°	228.7	201.8	179.5	180.9	191.8	192.3
69°	218.7	193.2	172.2	174.1	185.4	185.4
69.5°	208.7	184.5	164.9	168.1	178.6	178.2
70°	199.1	175.9	158.6	162.2	171.8	171.8
70.5°	189.5	167.7	152.2	156.3	165.4	164.9
71°	180.4	160.4	145.8	150.8	159.5	158.6
71.5°	171.8	153.1	139.4	144.9	153.1	152.6
72°	163.1	145.8	132.6	139.0	147.2	146.7
72.5°	154.9	138.5	127.1	133.0	141.2	140.3
73°	146.7	130.8	121.2	127.6	135.3	134.4
73.5°	139.0	124.4	115.7	122.1	129.4	128.5
74°	131.2	117.6	110.7	117.1	123.5	123.0
74.5°	123.9	111.2	105.3	111.6	118.0	117.1
75°	116.6	105.3	100.2	106.2	112.5	111.6
75.5°	109.8	99.3	95.7	101.2	107.1	106.2
76°	103.0	93.9	90.7	96.1	101.6	101.2
76.5°	96.6	88.4	86.1	91.6	96.6	95.7
77°	90.7	82.9	81.6	86.6	91.6	90.7
77.5°	84.7	77.9	77.5	82.0	86.1	85.7
78°	78.8	72.9	73.4	77.5	81.6	80.6
78.5°	73.4	68.3	68.8	72.9	76.5	76.1
79°	67.9	63.8	65.2	68.3	72.0	71.1
79.5°	62.9	59.2	61.1	64.2	67.4	66.5
80°	57.4	55.1	57.0	59.7	62.9	62.0
80.5°	52.9	51.0	53.3	55.6	58.3	57.9
81°	48.3	46.9	49.7	51.5	54.2	53.3
81.5°	43.7	43.3	45.6	47.4	49.7	49.2
82°	40.1	39.6	41.9	43.7	45.6	45.1
82.5°	36.0	36.0	38.3	39.6	41.5	41.0
83°	32.4	32.4	35.1	36.0	37.4	36.9
83.5°	28.2	29.2	31.4	32.4	33.7	32.8
84°	24.6	26.0	28.2	28.7	29.6	29.2
84.5°	21.0	22.8	25.1	25.5	26.0	25.5
85°	17.8	20.0	21.9	22.3	22.3	21.9
85.5°	14.6	16.9	18.7	19.1	18.7	18.2
86°	11.8	14.1	15.5	15.9	15.9	15.5
86.5°	9.1	11.4	12.8	13.2	13.7	12.8
87°	6.8	8.7	10.0	10.5	10.9	10.0
87.5°	4.1	6.4	7.3	7.3	8.2	7.3
88°	2.3	3.6	4.1	4.6	5.9	5.0
88.5°	0.5	1.4	1.8	2.3	3.6	3.2



TEST NUMBER: P776780

CATALOG NUMBER: HCDJBL54050CSD-HCD82TRH-HCD82TRLWW-5000lm-2700K

**CANDELA DISTRIBUTION (continued):**

	247.5°	270°	292.5°	315°	337.5°	360°
90°	0.0	0.0	0.0	0.0	0.5	0.0



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

Scaled Data Report





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

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Peachtree City, GA 30269

Scaled Data Report



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Scaled Data Report





21.5°	1983.8	2008.0	2090.9	2235.3	2425.4	2645.0	2847.7	2984.4	3051.8	3023.6	2901.5
22°	1957.9	1982.0	2066.8	2212.6	2404.8	2627.7	2834.1	2971.7	3040.0	3011.8	2887.8



44°	852.0	877.6	943.6	1037.0	1146.8	1282.6	1398.3	1429.8	1460.8	1450.3	1399.7
44.5°	828.8	854.3	918.6	1010.6	1114.0	1243.9	1355.5	1384.2	1413.8	1402.0	1355.1



66.5°	221.4	222.8	217.8	218.7	241.9	277.9	321.7	341.7	351.3	344.0	314.8
67°	214.1	215.5	211.0	210.0	231.9	267.0	308.9	328.1	336.7	329.9	302.1



89°	1.4	1.8	2.3	1.8	0.9	0.5	0.5	0.0	0.0	0.0	0.0
89.5°	0.5	0.5	0.5	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0



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21.5°	2702.8	2488.7	2274.5	2107.8	2026.7	1983.8
22°	2686.0	2467.7	2251.3	2083.2	2001.2	1957.9

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44°	1298.1	1184.7	1054.3	948.6	892.1	852.0
44.5°	1258.5	1150.0	1025.6	923.1	868.9	828.8

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66.5°	272.0	241.0	212.3	207.3	221.0	221.4
67°	260.6	231.0	203.7	200.5	213.7	214.1

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89°	0.0	0.5	0.5	0.5	1.8	1.4
89.5°	0.0	0.0	0.0	0.0	0.5	0.5

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Scaled Data Report



(END OF REPORT)