

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: P776758

Luminaire Tested: HCDJBS4050CSD-HCD81TRH-HCD81TRLWW-5000lm-4000K

Issue Date: 2/13/2024

Test Information

Test Method: LM-79-2019
Report Number: P776758
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (A2312156B048)
Test Lab:
Issue Date: 2/13/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: HALO COMMERCIAL
Catalog Number: HCDJBS4050CSD-HCD81TRH-HCD81TRLWW-5000lm-4000K
Description: 8 INCH ROUND SHALLOW-WIDE LENSED WALLWASH KIT
Light Source: SELECTABLE LUMENS AND CCT ARRAY 90CRI / 4000K CCT
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 5869.7 lumens
Efficiency: N/A
Efficacy: 122.3 lumens/watt
Spacing Criteria (0/90/45): 1.19 / 1.17 / 1.27
Luminous Opening: Circular (Dia: 0.67' x H: 0')
CIE Type: Direct

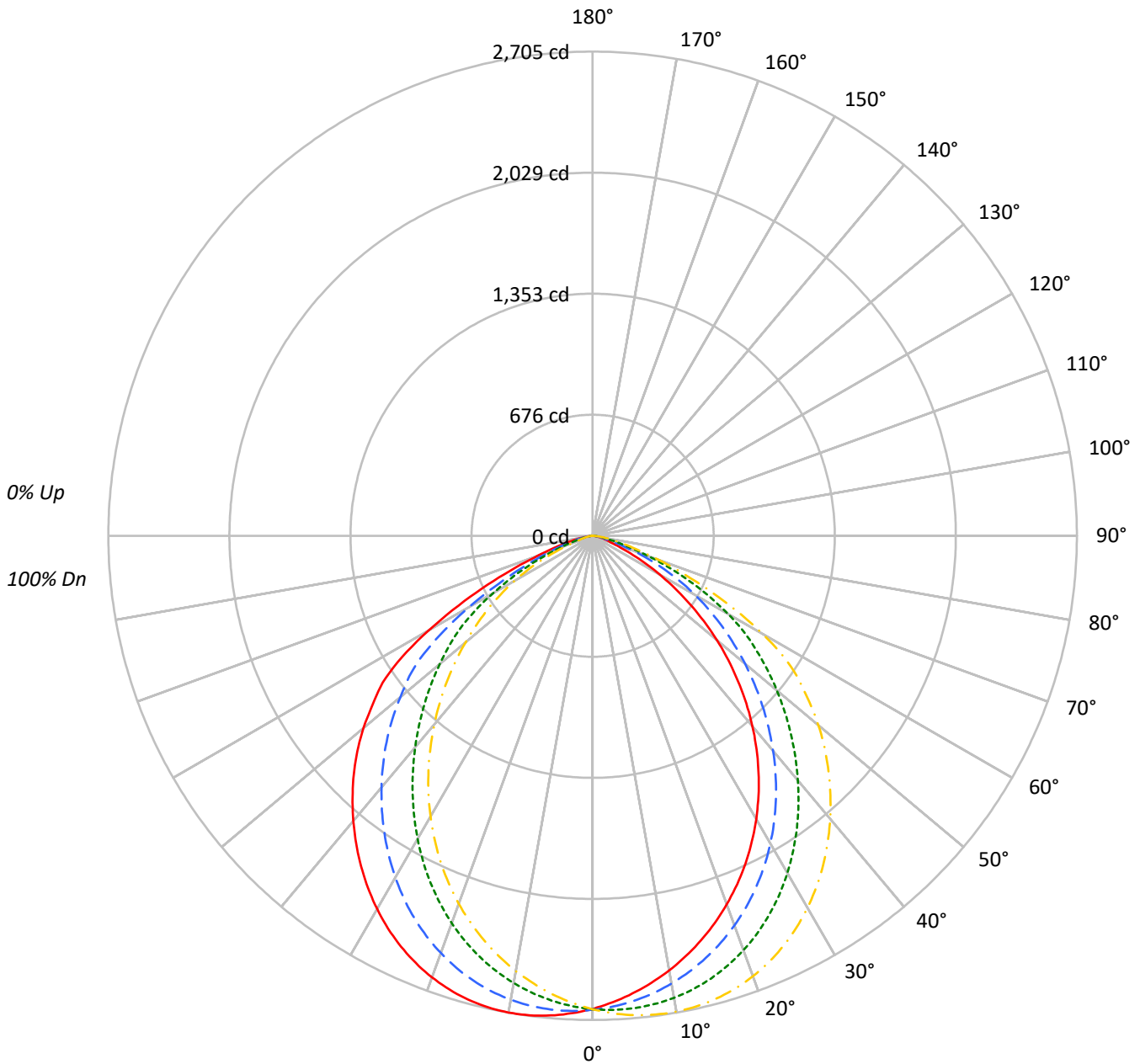
Input Watts (W): 48
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT



TEST NUMBER: P776758

CATALOG NUMBER: HCDJBL54050CSD-HCD81TRH-HCD81TRLWW-5000lm-4000K

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	0					
RCR																										
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100								
1	111	107	103	100	108	105	101	98	100	98	95	97	94	92	93	91	90	88								
2	102	95	89	84	100	93	88	83	90	85	81	86	83	79	83	80	78	76								
3	94	85	77	72	92	83	76	71	80	74	70	77	73	69	75	71	67	65								
4	87	76	68	62	84	74	67	61	72	66	61	70	64	60	68	63	59	57								
5	80	68	60	54	78	67	59	54	65	58	53	63	57	52	61	56	52	50								
6	74	62	53	48	72	61	53	47	59	52	47	57	51	47	56	50	46	44								
7	69	56	48	42	67	55	48	42	54	47	42	53	46	42	51	46	41	39								
8	64	52	44	38	63	51	43	38	50	43	38	48	42	37	47	42	37	35								
9	60	47	40	34	59	47	39	34	46	39	34	45	38	34	44	38	34	32								
10	56	44	36	31	55	43	36	31	42	36	31	41	35	31	41	35	31	29								

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°	270°
0°	80771	80771	80771	80771
5°	78646	81199	82443	79909
10°	76415	81248	83855	78653
15°	73948	80899	84799	76986
20°	71195	80051	85289	74801
25°	68050	78668	85304	72092
30°	64436	76694	84872	68956
35°	60229	74150	84023	65343
40°	55314	71076	82873	61452
45°	49618	67606	81439	57321
50°	42956	63807	79319	52926
55°	35178	59466	76190	48059
60°	26372	53324	64504	39305
65°	16897	42947	46747	28123
70°	9560	29502	28904	16951
75°	7278	17258	18284	9201
80°	5134	9494	10426	4378
85°	3013	5184	2697	1857

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 157.5°

Vertical Angle: 45°

Luminance: 82575 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	249.6	4.3
10°-20°	706.2	12.0
20°-30°	1039.9	17.7
30°-40°	1192.3	20.3
40°-50°	1147.4	19.5
50°-60°	914.9	15.6
60°-70°	474.9	8.1
70°-80°	128.1	2.2
80°-90°	16.4	0.3
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°	1995.7	34.0
0°-40°	3188.0	54.3
0°-60°	5250.3	89.4
0°-90°	5869.7	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	5869.7	100.0

CANDELA DISTRIBUTION:

	0°	90°	180°	270°	360°	Flux
0°	2646	2646	2646	2646	2646	
5°	2566	2650	2690	2607	2566	242
15°	2340	2560	2683	2436	2340	658
25°	2020	2335	2532	2140	2020	928
35°	1616	1990	2254	1753	1616	1008
45°	1149	1566	1886	1328	1149	884
55°	661	1117	1431	903	661	591
65°	234	594	647	389	234	242
75°	62	146	155	78	62	68
85°	9	15	8	5	9	11
90°	0	1	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°	2645.6	2645.6	2645.6	2645.6	2645.6	2645.6	2645.6	2645.6	2645.6	2645.6	2645.6
0.5°	2636.1	2647.5	2646.6	2645.2	2646.6	2649.0	2650.4	2650.4	2648.5	2656.6	2650.9
1°	2629.4	2642.8	2643.7	2644.7	2648.5	2653.3	2656.2	2656.2	2654.2	2660.5	2653.3
1.5°	2622.2	2637.5	2640.4	2644.2	2649.5	2656.2	2660.9	2660.9	2660.0	2663.8	2654.7
2°	2615.0	2632.2	2637.0	2642.8	2650.4	2659.5	2665.7	2665.7	2665.2	2667.2	2656.2
2.5°	2607.4	2626.5	2632.7	2641.8	2650.9	2662.4	2670.5	2670.5	2670.0	2670.5	2657.1
3°	2599.7	2620.3	2628.9	2639.9	2651.4	2665.2	2674.8	2674.8	2674.3	2673.4	2657.6
3.5°	2592.1	2614.1	2624.6	2638.0	2651.4	2667.6	2678.6	2678.6	2679.1	2675.8	2658.1
4°	2583.5	2607.4	2619.8	2635.6	2650.9	2669.5	2682.0	2682.0	2682.9	2677.7	2658.1
4.5°	2575.3	2600.7	2614.5	2632.7	2650.4	2671.0	2685.3	2685.3	2686.8	2679.6	2657.6
5°	2566.2	2593.5	2609.3	2629.9	2649.5	2671.9	2688.2	2688.2	2690.1	2681.0	2657.1
5.5°	2557.6	2586.3	2604.0	2626.5	2648.0	2672.9	2690.6	2690.6	2693.0	2682.0	2655.7
6°	2548.1	2578.7	2597.8	2622.7	2646.6	2673.4	2693.0	2693.0	2695.8	2682.5	2654.7
6.5°	2538.5	2570.5	2591.6	2618.9	2644.2	2673.8	2694.9	2694.9	2698.2	2682.9	2653.3
7°	2528.9	2562.4	2585.4	2614.5	2641.8	2673.8	2696.8	2696.8	2700.2	2682.9	2651.4
7.5°	2518.9	2553.8	2578.7	2610.2	2638.9	2673.4	2697.8	2697.8	2701.6	2682.5	2649.0
8°	2508.4	2545.2	2571.5	2605.0	2636.5	2672.9	2698.7	2698.7	2703.0	2682.0	2646.1
8.5°	2497.9	2536.1	2563.9	2599.7	2633.2	2671.5	2699.7	2699.7	2704.0	2680.5	2643.2
9°	2486.9	2527.0	2556.2	2594.0	2629.4	2670.5	2699.7	2699.7	2704.9	2679.6	2639.9
9.5°	2476.3	2517.5	2548.6	2588.2	2625.5	2668.6	2699.7	2699.7	2704.9	2677.7	2636.1
10°	2464.9	2507.9	2539.9	2582.0	2620.8	2666.2	2699.2	2712.6	2704.9	2675.3	2632.2
10.5°	2453.9	2497.9	2531.3	2575.3	2616.5	2664.3	2698.7	2712.1	2704.0	2672.9	2627.9
11°	2441.9	2487.3	2522.7	2568.2	2611.2	2661.4	2697.3	2711.6	2703.0	2670.0	2623.2
11.5°	2429.9	2477.3	2513.6	2561.5	2605.9	2658.5	2695.8	2710.7	2702.1	2667.2	2617.9
12°	2417.5	2466.3	2504.6	2553.8	2600.2	2655.2	2694.4	2709.7	2700.2	2663.3	2612.6
12.5°	2405.6	2455.3	2494.5	2545.7	2594.5	2651.4	2692.0	2707.8	2698.2	2659.5	2606.9
13°	2392.6	2443.8	2484.9	2537.6	2588.2	2647.5	2689.6	2705.9	2695.8	2655.2	2600.7
13.5°	2379.7	2432.3	2474.4	2529.4	2581.5	2643.2	2686.8	2703.5	2693.5	2650.9	2594.5
14°	2366.8	2420.9	2463.9	2520.3	2574.4	2638.5	2683.4	2701.1	2690.6	2645.6	2587.3
14.5°	2352.9	2408.9	2453.4	2511.7	2567.2	2633.2	2680.1	2698.2	2686.8	2640.4	2580.6
15°	2339.6	2396.9	2442.4	2502.2	2559.5	2627.5	2676.2	2694.4	2682.9	2634.6	2572.9
15.5°	2325.7	2384.0	2430.9	2492.6	2551.4	2622.2	2671.9	2690.6	2678.6	2628.9	2565.3
16°	2311.8	2371.1	2418.9	2482.6	2542.8	2616.0	2667.2	2686.8	2674.3	2622.2	2557.6
16.5°	2297.5	2358.2	2407.0	2472.0	2534.2	2609.3	2662.4	2682.0	2669.5	2615.5	2549.0
17°	2282.6	2344.8	2395.0	2461.0	2525.1	2602.6	2657.1	2677.2	2664.3	2608.3	2539.9
17.5°	2267.8	2331.4	2382.6	2450.5	2516.0	2595.4	2651.4	2671.9	2658.5	2600.7	2530.9
18°	2253.5	2317.6	2370.2	2439.0	2506.0	2587.8	2645.6	2666.2	2652.3	2593.0	2521.3
18.5°	2238.2	2303.7	2356.8	2427.6	2495.9	2579.6	2639.4	2660.5	2645.6	2584.9	2511.7
19°	2221.9	2289.3	2343.4	2415.6	2485.4	2572.0	2632.7	2654.2	2639.4	2576.8	2501.7
19.5°	2206.6	2274.5	2330.0	2403.2	2474.9	2563.4	2625.5	2647.5	2632.2	2567.7	2491.2
20°	2191.3	2260.2	2316.1	2391.2	2463.9	2554.3	2618.4	2640.4	2625.1	2558.6	2480.2
20.5°	2175.0	2244.9	2302.3	2378.3	2451.9	2545.2	2610.7	2633.2	2617.4	2549.0	2469.6
21°	2157.8	2230.0	2287.9	2365.4	2440.5	2535.6	2602.6	2625.5	2609.3	2539.5	2458.2



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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°	2108.6	2182.7	2243.0	2323.8	2403.6	2505.0	2576.3	2600.2	2582.5	2508.4	2422.3
23°	2091.4	2166.4	2227.6	2309.4	2390.7	2494.0	2566.7	2591.6	2572.9	2496.9	2409.4
23.5°	2073.7	2150.2	2211.9	2295.1	2376.9	2483.0	2557.2	2582.0	2563.4	2485.9	2396.9
24°	2056.0	2133.4	2195.6	2280.3	2363.5	2471.1	2547.1	2572.5	2553.3	2473.9	2383.6
24.5°	2038.3	2116.7	2179.3	2264.5	2349.6	2459.1	2536.6	2562.4	2542.8	2462.0	2370.2
25°	2020.1	2099.5	2163.1	2249.2	2335.3	2447.2	2525.6	2551.9	2532.3	2449.6	2356.3
25.5°	2001.9	2081.8	2146.3	2233.4	2320.4	2434.3	2514.6	2541.4	2520.8	2437.1	2342.4
26°	1983.3	2064.6	2129.1	2217.1	2305.6	2421.3	2503.1	2530.4	2509.3	2424.2	2328.1
26.5°	1964.6	2046.9	2111.9	2200.4	2290.3	2408.4	2491.6	2518.9	2497.9	2410.8	2313.7
27°	1945.5	2029.2	2094.7	2184.1	2275.0	2395.0	2479.2	2506.9	2485.9	2397.4	2298.4
27.5°	1926.4	2011.0	2077.0	2167.4	2259.2	2381.2	2466.8	2495.5	2473.5	2384.0	2283.6
28°	1907.2	1992.4	2059.3	2150.2	2242.5	2366.3	2454.3	2483.0	2461.0	2369.7	2267.8
28.5°	1887.1	1973.2	2041.1	2132.5	2226.2	2352.5	2441.4	2470.1	2447.6	2355.3	2252.5
29°	1867.5	1954.6	2022.5	2114.3	2209.5	2337.2	2427.6	2457.2	2434.7	2340.5	2236.3
29.5°	1847.9	1935.4	2004.3	2096.6	2192.7	2322.3	2414.2	2444.3	2420.9	2325.7	2220.0
30°	1827.8	1916.8	1985.2	2078.4	2175.5	2307.0	2400.3	2430.9	2407.5	2310.9	2203.3
30.5°	1807.3	1896.7	1966.1	2060.3	2157.8	2290.8	2385.9	2417.0	2393.1	2295.1	2187.0
31°	1786.7	1877.1	1946.9	2042.1	2140.6	2275.0	2371.6	2402.7	2378.8	2279.8	2170.3
31.5°	1765.7	1857.5	1927.3	2022.5	2122.4	2258.7	2356.3	2388.3	2363.9	2264.0	2153.0
32°	1745.1	1837.4	1907.7	2003.4	2103.8	2242.0	2341.5	2373.5	2349.1	2248.2	2135.8
32.5°	1724.1	1816.4	1887.6	1983.7	2085.1	2225.3	2326.2	2359.2	2333.8	2231.5	2118.6
33°	1703.0	1796.3	1867.1	1964.6	2066.5	2207.6	2310.4	2344.3	2318.5	2215.2	2100.4
33.5°	1681.5	1775.7	1847.0	1944.5	2047.4	2190.3	2294.6	2328.1	2302.7	2198.0	2082.7
34°	1659.5	1755.1	1826.9	1924.9	2028.7	2173.1	2277.9	2312.3	2287.0	2181.3	2064.6
34.5°	1638.0	1734.1	1806.3	1904.4	2009.1	2155.0	2261.6	2296.5	2270.7	2164.5	2046.4
35°	1616.0	1712.6	1785.8	1884.8	1989.5	2136.8	2244.9	2280.7	2254.4	2146.8	2027.7
35.5°	1594.0	1691.1	1764.2	1863.7	1969.4	2118.6	2227.6	2264.0	2238.2	2129.1	2009.6
36°	1571.5	1669.5	1743.2	1843.1	1949.8	2100.0	2210.9	2246.8	2221.0	2111.0	1990.0
36.5°	1549.0	1648.0	1721.7	1821.6	1929.7	2081.3	2192.7	2230.0	2204.2	2093.7	1970.8
37°	1526.5	1626.0	1700.6	1801.5	1909.6	2061.7	2175.0	2213.3	2186.5	2075.1	1952.2
37.5°	1504.1	1604.0	1678.6	1780.5	1888.6	2042.6	2156.9	2195.6	2169.3	2056.9	1933.1
38°	1480.6	1582.0	1656.6	1759.0	1868.0	2023.0	2138.7	2177.9	2151.6	2038.3	1913.4
38.5°	1457.7	1559.5	1634.6	1736.5	1847.0	2003.4	2120.5	2160.2	2133.9	2020.1	1893.8
39°	1435.2	1536.6	1612.6	1715.9	1826.9	1983.7	2101.9	2143.0	2115.7	2001.0	1874.2
39.5°	1412.2	1514.6	1590.6	1693.9	1804.9	1963.7	2082.7	2124.3	2098.0	1981.8	1854.6
40°	1387.9	1492.1	1568.2	1672.4	1783.4	1943.1	2064.1	2105.7	2079.4	1962.7	1834.1
40.5°	1364.9	1469.2	1545.7	1649.9	1761.8	1923.0	2045.0	2087.0	2060.7	1943.6	1814.4
41°	1341.0	1446.2	1523.2	1628.4	1740.3	1902.4	2024.9	2068.9	2042.1	1924.0	1793.9
41.5°	1317.6	1423.2	1500.7	1606.4	1718.8	1881.4	2005.7	2049.7	2023.0	1905.3	1773.8
42°	1293.2	1400.3	1477.3	1584.4	1697.3	1860.4	1985.7	2030.1	2003.8	1885.2	1753.7
42.5°	1270.2	1376.9	1455.3	1562.4	1675.8	1839.8	1966.5	2011.0	1984.7	1865.1	1732.7
43°	1245.8	1353.4	1432.3	1540.4	1653.8	1818.8	1946.0	1991.9	1965.6	1844.6	1712.1
43.5°	1221.4	1330.0	1409.9	1517.5	1631.8	1797.7	1925.9	1972.3	1946.0	1825.0	1691.5



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
45°	1149.2	1258.7	1340.5	1450.5	1565.8	1733.1	1864.2	1912.5	1886.2	1762.8	1627.9
45.5°	1124.8	1235.3	1318.0	1428.5	1543.8	1711.6	1843.1	1892.4	1866.1	1741.3	1606.4
46°	1100.4	1211.4	1294.6	1405.6	1521.8	1690.1	1822.1	1871.4	1845.5	1720.2	1584.9
46.5°	1076.0	1187.5	1272.1	1383.1	1499.8	1668.1	1801.1	1850.8	1825.0	1698.7	1562.9
47°	1052.1	1164.0	1248.7	1360.6	1477.8	1646.1	1779.1	1829.8	1803.4	1676.7	1540.9
47.5°	1027.3	1140.1	1225.7	1338.1	1454.8	1624.1	1758.0	1808.2	1781.9	1654.7	1517.9
48°	1001.9	1116.2	1202.3	1316.1	1432.8	1602.1	1736.0	1786.7	1760.9	1631.3	1495.5
48.5°	978.0	1091.8	1179.3	1293.2	1410.8	1580.1	1714.0	1764.7	1738.9	1608.3	1472.5
49°	953.6	1068.4	1155.9	1270.7	1388.3	1557.2	1691.5	1742.7	1716.4	1584.9	1449.1
49.5°	929.2	1044.5	1133.4	1248.2	1365.4	1534.7	1669.5	1720.2	1693.0	1561.0	1425.6
50°	904.4	1020.6	1111.0	1225.3	1343.4	1512.2	1646.1	1697.3	1670.0	1537.1	1402.2
50.5°	879.5	996.7	1087.5	1203.3	1320.9	1489.2	1622.7	1673.8	1646.1	1512.2	1379.2
51°	855.1	972.3	1064.6	1180.8	1298.4	1466.3	1599.2	1649.9	1622.2	1488.3	1356.3
51.5°	831.2	948.4	1041.6	1158.3	1275.9	1443.3	1575.3	1625.5	1597.8	1464.9	1333.8
52°	806.3	924.9	1018.7	1135.8	1253.0	1419.4	1550.9	1600.7	1572.9	1442.4	1312.3
52.5°	782.4	901.0	995.7	1113.3	1230.0	1396.0	1526.5	1575.8	1548.1	1420.4	1289.8
53°	757.5	877.1	973.2	1090.9	1207.1	1371.6	1501.7	1551.9	1524.6	1396.9	1267.3
53.5°	733.1	853.7	950.3	1068.9	1184.6	1347.7	1476.8	1526.5	1501.7	1372.6	1241.0
54°	709.2	830.2	927.8	1045.4	1161.6	1323.8	1452.9	1503.6	1479.2	1344.8	1214.3
54.5°	685.3	806.8	904.8	1023.4	1139.2	1300.8	1429.5	1481.6	1455.8	1314.2	1183.6
55°	660.9	783.4	882.4	1001.0	1117.2	1277.9	1407.0	1459.1	1431.4	1279.8	1152.1
55.5°	637.5	759.4	860.4	979.4	1095.7	1255.9	1383.6	1433.8	1402.2	1246.3	1119.1
56°	613.6	737.0	837.4	957.4	1073.7	1232.9	1359.2	1405.6	1370.2	1209.0	1085.1
56.5°	590.2	714.0	815.4	935.4	1051.7	1208.5	1331.9	1374.0	1336.7	1171.7	1051.2
57°	566.7	690.6	793.9	914.4	1027.7	1182.2	1302.7	1341.9	1300.8	1133.4	1016.7
57.5°	543.3	668.1	772.4	892.9	1003.8	1155.9	1271.6	1306.1	1262.1	1095.7	979.9
58°	521.3	645.6	749.9	871.4	978.5	1127.2	1239.6	1269.3	1222.9	1054.5	943.6
58.5°	498.3	623.6	727.9	848.4	953.6	1098.0	1206.1	1230.0	1183.2	1013.4	907.2
59°	475.9	601.6	706.4	825.4	926.8	1067.9	1169.8	1190.3	1141.6	973.2	870.9
59.5°	453.4	579.6	684.4	802.0	900.5	1036.3	1133.4	1147.8	1099.0	933.5	834.1
60°	431.9	557.2	662.4	778.6	873.3	1005.3	1096.1	1106.7	1056.4	891.9	798.2
60.5°	410.3	535.6	639.4	755.1	847.0	973.2	1058.3	1064.1	1013.9	851.7	762.3
61°	389.3	514.6	617.4	730.8	818.7	940.7	1019.1	1023.0	971.8	812.1	726.9
61.5°	367.8	492.6	594.9	707.3	791.0	907.7	979.4	980.4	928.7	771.4	691.5
62°	347.7	471.1	572.5	682.9	763.8	874.2	941.2	939.3	887.1	732.2	656.1
62.5°	327.6	449.5	550.5	659.0	735.1	840.7	901.0	897.7	844.6	693.9	622.2
63°	308.0	428.5	527.5	635.1	706.8	806.3	861.8	856.1	803.9	658.1	589.2
63.5°	287.9	407.5	505.5	609.8	678.6	772.4	823.1	814.9	763.3	621.7	556.7
64°	269.7	387.4	483.5	585.8	650.9	738.9	785.8	775.2	724.1	587.3	525.1
64.5°	251.6	366.8	461.5	561.5	622.7	704.9	747.5	736.0	685.8	553.8	494.5
65°	233.9	346.2	440.0	537.5	594.5	671.5	711.1	697.8	647.1	521.3	465.3
65.5°	216.6	326.6	418.0	513.2	566.2	638.5	674.8	660.0	609.3	490.7	439.5
66°	200.4	307.5	396.5	489.2	538.0	605.9	638.9	623.1	572.0	461.0	414.2



TEST NUMBER: P776758

CATALOG NUMBER: HCDJBL54050CSD-HCD81TRH-HCD81TRLWW-5000lm-4000K

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
67.5°	158.3	251.6	332.4	418.0	456.7	512.7	537.1	520.3	466.3	383.5	337.6
68°	146.3	233.9	311.8	394.5	431.4	483.0	505.0	488.3	436.6	357.2	315.2
68.5°	134.9	216.6	291.7	371.1	406.0	453.9	473.5	457.2	407.0	331.4	294.6
69°	122.9	199.4	271.2	348.2	380.7	427.1	446.2	429.5	377.3	309.4	275.0
69.5°	113.8	182.7	251.1	324.7	355.8	400.8	418.9	402.2	348.2	288.9	256.3
70°	107.1	167.9	231.5	303.2	330.5	374.0	392.2	374.5	323.8	269.3	239.1
70.5°	102.8	153.5	212.3	281.2	308.0	347.2	364.9	347.2	300.8	251.1	222.9
71°	98.0	139.6	194.2	259.7	286.5	324.2	337.6	323.8	279.3	233.9	207.1
71.5°	93.3	125.8	176.5	239.1	265.4	300.8	314.2	301.3	259.2	217.6	192.7
72°	88.5	111.9	162.1	219.5	245.3	279.3	291.7	280.2	241.0	202.8	179.3
72.5°	83.7	101.9	148.3	200.9	225.7	258.7	271.2	260.6	223.8	188.4	165.9
73°	78.9	94.7	134.4	183.6	207.6	239.6	252.0	242.0	208.0	175.0	154.0
73.5°	74.6	89.9	120.5	166.9	190.8	221.4	233.9	224.8	193.7	162.6	142.5
74°	70.3	85.1	106.2	153.5	175.0	204.7	216.6	209.0	179.8	150.6	131.5
74.5°	66.0	80.8	96.1	139.6	159.7	188.9	200.9	194.2	166.9	139.6	121.5
75°	61.7	76.5	87.0	126.3	146.3	174.1	186.0	180.3	155.0	129.1	111.4
75.5°	57.9	72.2	79.9	112.9	133.4	160.2	172.2	167.4	143.0	118.6	102.3
76°	54.0	67.9	73.2	101.9	121.5	147.3	159.3	155.0	132.0	109.0	93.3
76.5°	50.7	64.1	67.4	91.8	110.0	134.9	147.3	144.0	121.5	100.0	85.1
77°	47.3	59.8	62.6	83.2	100.4	124.3	135.8	133.0	111.0	91.3	77.0
77.5°	44.0	56.0	58.3	75.1	90.9	113.3	125.3	122.9	101.4	82.7	69.3
78°	40.7	52.6	55.0	67.9	82.3	103.3	114.8	112.9	92.3	75.1	62.2
78.5°	37.8	49.3	51.2	61.7	74.1	94.2	105.2	103.3	83.2	67.9	55.5
79°	34.9	45.9	48.3	56.0	67.0	85.6	96.1	94.7	74.6	60.7	49.3
79.5°	32.0	42.6	45.0	50.7	60.3	77.5	87.5	86.1	67.0	54.5	44.5
80°	29.2	39.2	42.1	45.9	54.0	69.8	79.4	78.0	59.3	49.3	39.2
80.5°	26.8	36.3	38.7	41.6	48.3	63.1	71.7	70.8	52.1	43.5	34.0
81°	24.4	33.5	36.3	37.8	44.0	56.0	64.6	63.6	46.4	38.3	29.2
81.5°	22.0	31.1	33.5	34.4	39.2	50.2	57.4	56.9	40.7	33.0	23.9
82°	19.6	28.2	31.1	31.1	34.9	45.0	51.2	50.2	34.9	27.7	20.1
82.5°	17.7	25.8	28.2	28.2	30.1	40.2	45.9	45.0	28.7	22.5	16.7
83°	15.3	23.0	25.8	25.3	25.8	35.4	40.7	39.7	23.0	18.7	13.4
83.5°	13.4	21.0	23.9	23.4	22.5	30.1	35.4	34.4	18.7	14.8	10.5
84°	12.0	18.7	21.5	21.0	19.6	25.3	30.1	29.2	14.3	11.5	8.1
84.5°	10.0	16.7	19.1	19.1	17.2	22.0	24.9	23.9	11.0	8.6	6.2
85°	8.6	14.8	17.2	17.2	14.8	18.7	21.0	19.6	7.7	5.7	4.3
85.5°	7.2	12.9	15.8	15.3	12.4	15.3	17.2	15.8	4.8	3.8	2.9
86°	5.7	11.0	13.9	13.9	11.0	12.9	13.9	12.4	2.9	2.4	1.4
86.5°	4.3	9.1	12.0	12.0	9.1	10.5	11.0	9.1	1.9	1.0	0.5
87°	3.3	7.7	10.0	10.5	7.7	8.1	8.6	6.7	1.4	0.5	0.0
87.5°	2.4	6.2	8.6	9.1	6.2	6.7	6.2	4.8	1.0	0.0	0.0
88°	1.9	4.8	7.2	7.7	5.3	4.8	4.3	2.9	0.5	0.0	0.0
88.5°	1.0	3.8	5.7	6.2	3.8	3.3	2.9	1.4	0.5	0.0	0.0



TEST NUMBER: P776758

CATALOG NUMBER: HCDJBL54050CSD-HCD81TRH-HCD81TRLWW-5000lm-4000K

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
90°	0.0	1.4	2.4	2.9	1.4	1.0	0.0	0.0	0.0	0.0	0.0



TEST NUMBER: P776758

CATALOG NUMBER: HCDJBL54050CSD-HCD81TRH-HCD81TRLWW-5000lm-4000K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
0°	2645.6	2645.6	2645.6	2645.6	2645.6	2645.6
0.5°	2645.2	2642.8	2640.4	2638.9	2637.0	2636.1
1°	2644.7	2639.9	2635.6	2632.7	2629.9	2629.4
1.5°	2643.7	2637.0	2630.3	2625.5	2622.7	2622.2
2°	2642.8	2633.7	2625.1	2618.9	2615.0	2615.0
2.5°	2640.9	2629.9	2619.3	2611.7	2607.4	2607.4
3°	2638.9	2626.0	2613.1	2604.0	2599.2	2599.7
3.5°	2637.0	2622.2	2606.9	2596.4	2591.1	2592.1
4°	2634.2	2617.4	2600.2	2588.2	2582.0	2583.5
4.5°	2631.8	2612.6	2593.0	2579.6	2573.4	2575.3
5°	2628.4	2607.4	2585.9	2571.0	2563.9	2566.2
5.5°	2625.1	2601.6	2578.2	2561.9	2554.8	2557.6
6°	2621.2	2595.9	2570.1	2552.9	2545.2	2548.1
6.5°	2616.9	2589.7	2561.9	2543.3	2535.2	2538.5
7°	2612.6	2583.5	2553.3	2533.7	2525.1	2528.9
7.5°	2607.9	2576.3	2544.7	2523.7	2514.6	2518.9
8°	2602.6	2569.1	2535.6	2513.2	2504.1	2508.4
8.5°	2597.3	2561.5	2526.1	2502.6	2493.1	2497.9
9°	2591.1	2553.8	2516.5	2491.6	2481.6	2486.9
9.5°	2585.4	2545.7	2506.5	2480.6	2470.1	2476.3
10°	2578.7	2537.1	2495.9	2469.2	2458.6	2464.9
10.5°	2572.0	2528.9	2485.4	2457.2	2446.7	2453.9
11°	2564.8	2519.4	2474.4	2445.7	2434.7	2441.9
11.5°	2557.6	2509.8	2462.9	2433.3	2422.3	2429.9
12°	2549.5	2500.2	2451.5	2420.9	2409.4	2417.5
12.5°	2541.4	2490.2	2439.5	2407.9	2396.5	2405.6
13°	2532.8	2480.2	2427.6	2395.0	2383.6	2392.6
13.5°	2524.2	2469.2	2415.1	2381.6	2370.6	2379.7
14°	2515.1	2458.2	2402.2	2368.7	2356.8	2366.8
14.5°	2506.0	2447.2	2389.8	2354.9	2342.9	2352.9
15°	2495.9	2435.7	2376.4	2340.5	2329.0	2339.6
15.5°	2485.9	2423.7	2362.5	2326.2	2314.2	2325.7
16°	2475.4	2411.3	2349.1	2311.8	2300.3	2311.8
16.5°	2464.9	2398.9	2334.8	2297.0	2285.5	2297.5
17°	2453.9	2385.9	2320.4	2282.2	2270.7	2282.6
17.5°	2442.4	2372.6	2305.6	2266.4	2255.4	2267.8
18°	2430.4	2359.2	2290.8	2251.6	2240.1	2253.5
18.5°	2418.5	2345.3	2275.5	2235.3	2223.8	2238.2
19°	2406.5	2331.4	2259.7	2220.0	2208.5	2221.9
19.5°	2393.6	2317.1	2243.9	2203.3	2192.3	2206.6
20°	2380.7	2302.3	2227.6	2187.0	2176.0	2191.3
20.5°	2367.3	2287.4	2211.4	2169.8	2159.7	2175.0
21°	2353.9	2272.1	2194.7	2153.0	2142.5	2157.8

TEST NUMBER: P776758

CATALOG NUMBER: HCDJBL54050CSD-HCD81TRH-HCD81TRLWW-5000lm-4000K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
22.5°	2311.8	2224.8	2143.5	2100.4	2090.9	2108.6
23°	2297.0	2208.5	2126.3	2082.7	2073.2	2091.4
23.5°	2282.2	2191.8	2108.6	2065.0	2055.5	2073.7
24°	2266.4	2174.6	2090.4	2046.9	2037.3	2056.0
24.5°	2251.1	2157.8	2072.2	2027.7	2019.1	2038.3
25°	2235.3	2140.1	2053.1	2009.1	2000.5	2020.1
25.5°	2219.0	2123.4	2034.9	1990.4	1981.8	2001.9
26°	2202.8	2105.2	2016.3	1971.3	1963.2	1983.3
26.5°	2186.0	2087.5	1997.1	1951.7	1944.1	1964.6
27°	2169.3	2068.9	1978.0	1932.1	1924.9	1945.5
27.5°	2152.1	2050.7	1958.4	1912.5	1905.3	1926.4
28°	2134.9	2032.0	1938.8	1892.9	1885.2	1907.2
28.5°	2117.2	2012.9	1919.2	1872.8	1865.6	1887.1
29°	2099.5	1994.3	1899.1	1852.2	1846.0	1867.5
29.5°	2081.3	1975.1	1879.0	1831.7	1825.4	1847.9
30°	2063.1	1956.0	1858.9	1811.6	1804.9	1827.8
30.5°	2045.0	1935.9	1838.4	1790.5	1784.8	1807.3
31°	2026.8	1916.3	1817.8	1770.0	1763.8	1786.7
31.5°	2007.7	1896.2	1796.8	1748.9	1743.2	1765.7
32°	1989.0	1876.1	1775.7	1727.4	1721.7	1745.1
32.5°	1969.4	1856.1	1755.1	1706.4	1700.6	1724.1
33°	1950.3	1836.0	1734.1	1684.8	1679.1	1703.0
33.5°	1930.7	1814.9	1713.1	1663.3	1657.6	1681.5
34°	1911.1	1794.8	1691.1	1641.8	1635.6	1659.5
34.5°	1891.9	1773.8	1670.0	1620.3	1614.1	1638.0
35°	1871.8	1753.2	1648.0	1598.3	1591.6	1616.0
35.5°	1851.8	1732.7	1626.5	1575.8	1570.1	1594.0
36°	1831.7	1711.1	1605.5	1554.3	1547.1	1571.5
36.5°	1811.6	1690.6	1583.5	1532.3	1525.6	1549.0
37°	1791.0	1669.5	1561.9	1509.8	1502.6	1526.5
37.5°	1770.5	1648.5	1540.4	1487.3	1480.2	1504.1
38°	1749.9	1627.0	1518.4	1464.9	1457.2	1480.6
38.5°	1729.3	1605.5	1496.9	1442.9	1434.7	1457.7
39°	1709.2	1584.4	1474.4	1420.4	1411.8	1435.2
39.5°	1688.2	1563.4	1452.9	1397.9	1388.8	1412.2
40°	1667.2	1541.9	1430.9	1375.4	1365.9	1387.9
40.5°	1646.6	1520.3	1409.4	1352.9	1342.9	1364.9
41°	1625.5	1498.3	1387.4	1330.5	1319.0	1341.0
41.5°	1605.0	1477.8	1364.9	1308.0	1296.0	1317.6
42°	1583.9	1456.7	1343.4	1285.0	1273.1	1293.2
42.5°	1562.4	1434.7	1321.9	1262.6	1249.6	1270.2
43°	1541.4	1413.2	1300.3	1239.6	1225.7	1245.8
43.5°	1520.3	1392.2	1277.9	1217.6	1202.8	1221.4



TEST NUMBER: P776758

CATALOG NUMBER: HCDJBL54050CSD-HCD81TRH-HCD81TRLWW-5000lm-4000K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
45°	1456.2	1327.6	1212.8	1149.7	1131.5	1149.2
45.5°	1434.7	1307.0	1190.8	1127.7	1108.6	1124.8
46°	1413.7	1286.0	1169.8	1105.2	1085.1	1100.4
46.5°	1391.7	1264.0	1147.8	1082.7	1061.2	1076.0
47°	1369.7	1242.5	1126.7	1060.3	1037.8	1052.1
47.5°	1347.7	1221.4	1104.3	1037.8	1013.9	1027.3
48°	1325.2	1199.9	1083.7	1015.8	990.4	1001.9
48.5°	1303.2	1178.4	1061.7	993.3	967.0	978.0
49°	1280.7	1157.3	1040.7	971.3	943.6	953.6
49.5°	1257.8	1135.8	1019.1	948.8	920.6	929.2
50°	1235.8	1114.3	997.6	926.8	896.7	904.4
50.5°	1213.8	1092.3	976.1	905.3	873.3	879.5
51°	1192.3	1070.8	955.0	883.3	850.3	855.1
51.5°	1170.7	1050.2	934.0	860.8	827.4	831.2
52°	1150.6	1030.1	913.4	839.8	804.4	806.3
52.5°	1129.1	1010.0	892.9	818.3	781.0	782.4
53°	1106.7	990.0	873.3	797.2	758.0	757.5
53.5°	1082.7	969.4	852.7	775.7	735.5	733.1
54°	1056.9	947.9	832.6	754.7	712.6	709.2
54.5°	1031.1	925.9	812.1	734.6	690.1	685.3
55°	1002.4	902.9	791.0	714.0	668.1	660.9
55.5°	973.7	878.5	769.0	692.5	646.1	637.5
56°	943.6	854.1	747.5	671.9	624.6	613.6
56.5°	913.9	829.3	725.5	650.4	602.6	590.2
57°	882.4	803.4	703.5	629.4	581.1	566.7
57.5°	851.7	777.1	681.0	607.8	559.5	543.3
58°	820.2	750.8	659.0	587.3	538.5	521.3
58.5°	788.6	724.5	635.6	566.2	517.5	498.3
59°	757.5	697.3	613.1	545.2	496.4	475.9
59.5°	726.4	670.5	590.2	524.2	475.4	453.4
60°	694.9	643.7	566.7	503.6	454.3	431.9
60.5°	664.3	616.9	543.3	482.1	433.8	410.3
61°	634.1	590.2	519.8	461.5	413.2	389.3
61.5°	603.5	563.8	496.4	440.9	393.1	367.8
62°	573.4	537.5	473.5	420.4	373.5	347.7
62.5°	544.7	511.7	450.0	399.3	353.4	327.6
63°	516.0	486.4	426.6	378.8	334.3	308.0
63.5°	488.3	461.0	404.1	357.2	315.2	287.9
64°	462.0	436.2	381.6	336.7	297.0	269.7
64.5°	436.6	412.7	359.6	316.1	278.8	251.6
65°	411.3	389.3	337.6	296.5	261.1	233.9
65.5°	386.4	365.4	317.1	275.9	242.9	216.6
66°	361.1	342.4	295.6	255.9	226.2	200.4



TEST NUMBER: P776758

CATALOG NUMBER: HCDJBL54050CSD-HCD81TRH-HCD81TRLWW-5000lm-4000K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
67.5°	292.7	279.8	237.2	201.3	176.5	158.3
68°	273.1	259.7	218.6	184.1	163.1	146.3
68.5°	253.9	240.6	200.9	166.9	149.7	134.9
69°	235.8	222.9	184.1	154.0	136.8	122.9
69.5°	219.0	206.1	167.4	141.1	123.4	113.8
70°	203.7	189.9	154.5	127.7	110.0	107.1
70.5°	188.4	175.0	142.0	114.8	100.4	102.8
71°	174.1	162.6	129.1	103.8	93.7	98.0
71.5°	161.2	150.2	116.2	94.7	89.0	93.3
72°	148.3	138.2	105.7	86.6	84.6	88.5
72.5°	137.3	125.8	96.1	79.4	80.3	83.7
73°	126.3	113.8	87.0	73.2	76.0	78.9
73.5°	115.7	103.3	78.9	67.4	71.7	74.6
74°	106.2	94.2	71.7	62.6	67.4	70.3
74.5°	96.6	85.6	65.5	58.8	63.6	66.0
75°	88.0	78.0	59.3	55.0	59.8	61.7
75.5°	79.9	70.3	54.0	51.7	56.0	57.9
76°	72.7	63.6	48.8	48.3	52.1	54.0
76.5°	65.0	56.9	44.5	45.4	48.8	50.7
77°	58.8	51.2	40.7	42.1	45.4	47.3
77.5°	52.6	45.9	36.8	39.7	42.1	44.0
78°	47.3	41.1	33.5	36.8	39.2	40.7
78.5°	42.6	36.3	30.6	34.0	36.3	37.8
79°	37.3	32.5	27.7	31.6	33.5	34.9
79.5°	32.5	28.7	25.3	28.7	30.6	32.0
80°	27.7	24.9	23.0	26.3	27.7	29.2
80.5°	23.9	22.0	21.0	23.9	25.3	26.8
81°	20.6	19.1	19.1	22.0	23.0	24.4
81.5°	17.2	17.2	17.2	19.6	20.6	22.0
82°	14.3	15.3	15.3	17.7	18.2	19.6
82.5°	12.0	12.9	13.4	15.8	16.3	17.7
83°	9.6	11.0	12.0	13.9	14.3	15.3
83.5°	7.7	9.1	10.0	12.0	12.4	13.4
84°	6.2	7.7	8.6	10.0	10.5	12.0
84.5°	4.3	6.2	7.7	8.6	8.6	10.0
85°	3.3	5.3	6.2	7.2	7.2	8.6
85.5°	2.4	3.8	4.8	6.2	5.7	7.2
86°	1.4	2.9	3.8	4.8	4.8	5.7
86.5°	0.5	1.9	2.4	3.3	3.8	4.3
87°	0.0	1.0	1.4	2.4	2.9	3.3
87.5°	0.0	0.5	0.5	1.4	1.9	2.4
88°	0.0	0.0	0.0	0.5	1.0	1.9
88.5°	0.0	0.0	0.0	0.0	0.5	1.0



TEST NUMBER: P776758

CATALOG NUMBER: HCDJBL54050CSD-HCD81TRH-HCD81TRLWW-5000lm-4000K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
90°	0.0	0.0	0.0	0.0	0.0	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°	2141.6	2214.3	2273.1	2351.5	2428.5	2525.6	2594.0	2617.4	2600.7	2529.4	2446.7
22°	2125.3	2199.0	2258.3	2337.6	2416.6	2515.6	2585.4	2608.8	2592.1	2518.9	2434.3



44°	1197.5	1306.6	1386.4	1495.5	1609.8	1775.7	1904.8	1952.2	1926.4	1804.4	1670.5
44.5°	1173.6	1282.6	1363.9	1473.5	1587.8	1754.7	1884.8	1932.1	1906.7	1783.8	1649.5



66.5°	185.1	288.4	375.4	465.3	510.8	574.4	604.0	587.8	535.2	435.2	388.3
67°	169.8	269.3	354.4	441.4	484.0	542.8	570.5	553.8	500.7	409.4	363.0



89°	0.5	2.9	4.8	5.3	2.9	2.4	1.4	0.5	0.0	0.0	0.0
89.5°	0.0	1.9	3.3	3.8	1.9	1.4	0.5	0.0	0.0	0.0	0.0

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21.5°	2340.0	2256.3	2177.9	2135.8	2125.3	2141.6
22°	2325.7	2240.6	2161.2	2118.1	2108.6	2125.3



44°	1499.3	1371.1	1255.9	1194.6	1179.3	1197.5
44.5°	1477.3	1349.1	1234.3	1172.6	1155.4	1173.6



66.5°	336.2	321.4	275.5	237.2	209.0	185.1
67°	313.2	299.9	255.4	218.6	192.3	169.8

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89°	0.0	0.0	0.0	0.0	0.0	0.5
89.5°	0.0	0.0	0.0	0.0	0.0	0.0

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Peachtree City, GA 30269

Scaled Data Report



(END OF REPORT)