

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: P776657

Luminaire Tested: HCDJBS4050CSD-HCD61TRH-HCD61TRLWW-5000lm-3500K

Issue Date: 2/13/2024

**Test Information**

Test Method: LM-79-2019  
Report Number: P776657  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA ( A2312156B041)  
Test Lab:  
Issue Date: 2/13/2024  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: HALO COMMERCIAL  
Catalog Number: HCDJBS4050CSD-HCD61TRH-HCD61TRLWW-5000lm-3500K  
Description: 6 INCH ROUND SHALLOW-WIDE LENSED WALLWASH KIT  
Light Source: SELECTABLE LUMENS AND CCT ARRAY 90CRI / 3500K CCT  
Ballast/Driver: -

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 5713.1 lumens  
Efficiency: N/A  
Efficacy: 119.0 lumens/watt  
Spacing Criteria (0/90/45): 1.17 / 1.16 / 1.25  
Luminous Opening: Circular (Dia: 0.5' x H: 0')  
CIE Type: Direct

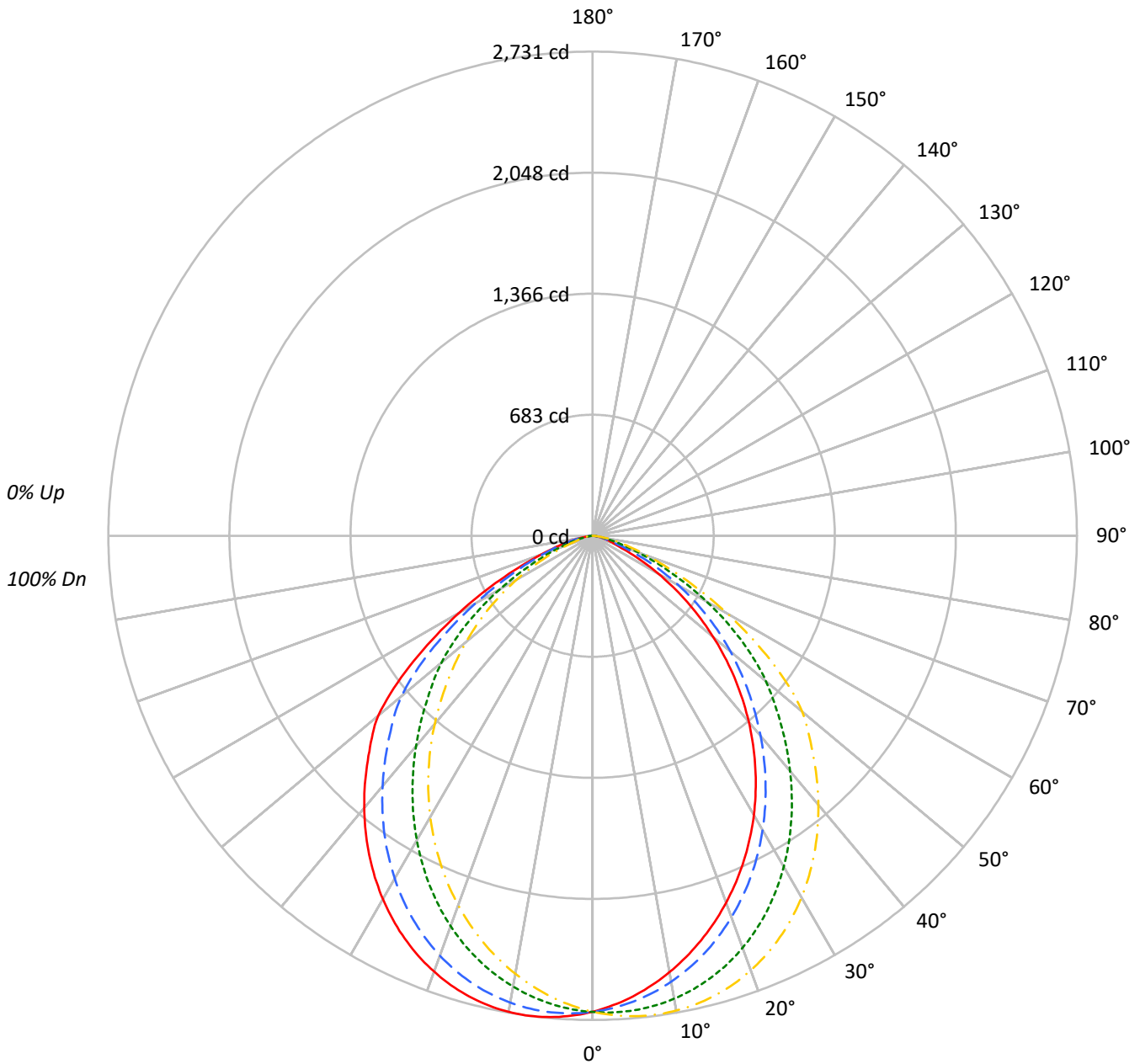
Input Watts (W): 48  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 24 FT



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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									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	99	100	98	95	97	94	93	93	91	90	88																			
2	102	95	89	84	100	93	88	83	90	85	82	87	83	80	84	81	78	76																			
3	94	85	78	72	92	83	77	71	81	75	70	78	73	69	75	71	68	66																			
4	87	76	68	62	85	75	68	62	72	66	61	70	65	60	68	63	60	58																			
5	80	69	61	55	78	68	60	54	66	59	54	64	58	53	62	57	53	51																			
6	75	62	54	48	73	61	54	48	60	53	48	58	52	47	57	51	47	45																			
7	69	57	49	43	68	56	48	43	55	48	43	53	47	42	52	46	42	40																			
8	65	52	44	39	63	51	44	39	50	43	38	49	43	38	48	42	38	36																			
9	61	48	40	35	59	47	40	35	46	40	35	45	39	35	44	39	35	33																			
10	57	44	37	32	56	44	37	32	43	36	32	42	36	32	41	36	32	30																			

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

	0°	90°	180°	270°
0°	147203	147203	147203	147203
5°	143506	147842	149967	145922
10°	139103	147581	151806	143746
15°	134081	146448	152685	140671
20°	128473	144265	152602	136646
25°	122160	140966	151660	131548
30°	115094	136445	149757	125519
35°	107070	130741	146963	118527
40°	97984	124011	143383	110843
45°	87653	116431	139061	102755
50°	75784	108773	134477	94854
55°	62258	97373	117702	82721
60°	47058	81342	95256	66343
65°	30898	62406	71279	48942
70°	20484	43693	49223	32954
75°	16394	28171	34165	20884
80°	12060	17269	20552	12344
85°	6542	10064	4466	7108

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 157.5°  
 Vertical Angle: 45°  
 Luminance: 140015 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	252.9	4.4
10°-20°	711.8	12.5
20°-30°	1038.7	18.2
30°-40°	1175.6	20.6
40°-50°	1112.3	19.5
50°-60°	844.5	14.8
60°-70°	423.1	7.4
70°-80°	134.0	2.3
80°-90°	20.3	0.4
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°	2003.4	35.1
0°-40°	3179.0	55.6
0°-60°	5135.7	89.9
0°-90°	5713.1	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	5713.1	100.0

**CANDELA DISTRIBUTION:**

	0°	90°	180°	270°	360°	Flux
0°	2685	2685	2685	2685	2685	
5°	2608	2687	2725	2652	2608	245
15°	2362	2580	2690	2479	2362	664
25°	2020	2330	2507	2175	2020	928
35°	1600	1954	2196	1771	1600	998
45°	1131	1502	1794	1325	1131	870
55°	651	1019	1232	866	651	582
65°	238	481	550	377	238	247
75°	77	133	161	99	77	84
85°	10	16	7	11	10	15
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°	2685.2	2685.2	2685.2	2685.2	2685.2	2685.2	2685.2	2685.2	2685.2	2685.2	2685.2
0.5°	2678.6	2680.4	2682.3	2683.7	2688.0	2688.5	2689.4	2689.9	2690.3	2690.3	2688.5
1°	2672.0	2675.3	2678.6	2682.8	2689.4	2691.8	2694.1	2695.5	2695.5	2694.6	2690.8
1.5°	2665.3	2669.6	2674.8	2680.9	2690.3	2695.1	2698.8	2700.7	2700.7	2698.4	2693.2
2°	2658.3	2663.5	2670.5	2679.0	2690.8	2697.4	2702.6	2705.4	2705.0	2702.1	2694.6
2.5°	2650.3	2656.9	2665.8	2676.7	2690.8	2699.8	2706.4	2709.7	2709.7	2705.4	2696.5
3°	2642.7	2650.3	2660.6	2673.8	2690.8	2701.7	2710.2	2713.9	2713.0	2707.8	2697.4
3.5°	2634.7	2643.2	2655.4	2670.5	2690.3	2703.6	2713.0	2717.7	2716.8	2710.2	2697.9
4°	2625.7	2635.6	2649.8	2667.2	2689.4	2704.5	2715.8	2721.0	2720.1	2712.5	2698.4
4.5°	2617.2	2627.6	2643.7	2663.5	2688.5	2705.4	2718.2	2724.3	2722.9	2713.9	2698.4
5°	2607.8	2619.6	2637.0	2659.2	2686.6	2705.9	2720.1	2726.7	2725.2	2715.3	2697.9
5.5°	2598.4	2610.6	2630.4	2654.5	2684.7	2706.4	2721.5	2729.0	2727.1	2716.3	2697.4
6°	2588.5	2601.7	2622.9	2649.8	2682.3	2705.9	2722.9	2730.9	2728.5	2716.8	2696.0
6.5°	2578.6	2592.7	2615.8	2644.6	2680.0	2705.4	2723.8	2732.3	2730.0	2716.8	2694.6
7°	2568.2	2583.3	2607.8	2638.9	2676.7	2704.5	2724.3	2733.3	2730.4	2716.8	2692.7
7.5°	2557.3	2573.4	2599.8	2632.8	2673.4	2703.1	2724.3	2733.7	2730.9	2715.8	2690.3
8°	2546.0	2563.0	2591.3	2626.2	2669.6	2701.7	2724.3	2734.2	2730.9	2714.9	2688.0
8.5°	2534.7	2552.6	2582.3	2619.6	2665.8	2699.8	2723.8	2734.2	2730.4	2713.5	2684.7
9°	2523.4	2542.2	2572.9	2612.5	2661.1	2697.9	2722.4	2733.7	2730.0	2712.0	2681.4
9.5°	2511.1	2530.9	2563.5	2605.4	2656.4	2695.1	2721.5	2732.8	2728.5	2709.7	2678.1
10°	2498.9	2519.6	2554.0	2597.4	2651.2	2692.2	2719.6	2731.4	2727.1	2707.3	2673.8
10.5°	2486.6	2507.8	2543.7	2589.4	2646.0	2688.5	2717.7	2730.0	2725.2	2704.0	2669.6
11°	2473.9	2496.0	2532.8	2580.9	2639.9	2684.7	2715.3	2728.1	2722.4	2701.2	2664.9
11.5°	2460.6	2483.8	2522.0	2572.0	2633.7	2680.9	2712.5	2725.2	2720.1	2697.4	2659.7
12°	2447.4	2471.0	2511.1	2562.5	2627.1	2676.2	2709.2	2722.9	2716.8	2693.6	2654.5
12.5°	2433.8	2458.3	2499.3	2553.6	2620.5	2671.5	2705.4	2719.6	2713.5	2689.4	2648.4
13°	2420.1	2445.1	2487.5	2543.2	2613.0	2666.3	2701.7	2715.8	2709.7	2684.7	2642.2
13.5°	2405.9	2431.9	2475.3	2533.3	2605.4	2661.1	2697.4	2712.0	2705.0	2679.5	2636.1
14°	2391.8	2418.2	2463.0	2522.9	2597.4	2655.0	2692.7	2707.8	2700.7	2673.8	2629.0
14.5°	2377.2	2404.5	2450.3	2512.1	2588.9	2648.8	2687.5	2703.1	2695.5	2668.2	2622.0
15°	2362.5	2389.9	2437.1	2500.3	2580.4	2641.8	2682.3	2697.9	2690.3	2662.0	2614.4
15.5°	2347.4	2375.3	2423.4	2488.9	2571.0	2635.2	2676.7	2692.7	2684.7	2655.4	2606.4
16°	2332.4	2360.7	2410.2	2476.7	2561.6	2627.6	2670.5	2686.6	2678.1	2648.4	2597.9
16.5°	2316.8	2345.6	2396.0	2464.9	2552.1	2620.1	2663.9	2680.4	2672.0	2641.3	2589.4
17°	2300.8	2330.5	2381.4	2451.7	2542.2	2612.0	2657.3	2674.3	2664.9	2633.7	2580.4
17.5°	2285.2	2314.9	2366.8	2439.0	2531.4	2603.6	2649.8	2667.2	2657.8	2625.7	2571.5
18°	2268.7	2298.9	2352.2	2425.7	2520.1	2595.1	2642.2	2659.7	2649.8	2617.2	2561.6
18.5°	2252.6	2283.3	2336.6	2412.1	2509.2	2585.6	2634.2	2652.1	2642.2	2608.3	2551.7
19°	2235.7	2266.8	2321.5	2397.9	2497.4	2576.2	2625.7	2644.1	2633.7	2599.3	2541.3
19.5°	2218.7	2250.8	2305.5	2383.3	2485.6	2566.3	2617.2	2635.6	2624.8	2590.4	2530.5
20°	2202.2	2233.8	2289.9	2369.1	2472.9	2555.9	2608.7	2626.7	2615.8	2580.4	2519.6
20.5°	2184.3	2216.8	2273.4	2354.1	2460.2	2545.1	2599.3	2617.7	2606.4	2570.1	2507.8
21°	2166.8	2199.3	2256.9	2339.0	2447.4	2534.7	2589.4	2608.3	2597.0	2559.7	2496.5



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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°	2113.5	2146.5	2205.5	2290.8	2406.4	2499.3	2557.8	2578.1	2565.8	2526.7	2459.7
23°	2095.1	2128.1	2188.0	2274.3	2391.8	2487.1	2547.0	2567.2	2554.5	2514.9	2446.5
23.5°	2076.7	2110.2	2170.6	2257.4	2377.2	2474.3	2535.6	2555.9	2543.2	2502.6	2433.3
24°	2057.8	2091.8	2152.2	2240.4	2362.1	2461.1	2523.4	2544.6	2531.9	2489.9	2419.6
24.5°	2038.5	2072.9	2133.3	2222.5	2346.5	2447.4	2511.1	2532.8	2519.1	2477.2	2405.5
25°	2019.6	2053.6	2114.9	2205.0	2330.5	2434.2	2498.9	2520.5	2507.3	2464.4	2391.3
25.5°	2000.3	2034.7	2096.5	2187.1	2314.4	2419.6	2486.1	2508.3	2494.1	2451.2	2376.7
26°	1981.0	2015.4	2077.7	2168.7	2298.4	2405.0	2472.9	2495.5	2481.4	2437.1	2362.1
26.5°	1961.2	1996.1	2057.4	2149.8	2281.4	2390.4	2459.2	2481.9	2467.7	2423.4	2347.0
27°	1941.3	1976.3	2038.5	2131.4	2264.0	2375.3	2445.1	2468.7	2454.5	2408.8	2331.4
27.5°	1921.1	1956.0	2018.7	2112.1	2247.0	2359.7	2431.4	2455.0	2440.4	2394.6	2315.8
28°	1900.8	1935.7	1998.9	2092.8	2229.1	2343.7	2416.8	2440.8	2425.7	2380.0	2299.3
28.5°	1880.5	1915.4	1978.1	2072.9	2211.1	2327.6	2401.7	2426.2	2411.1	2364.4	2283.3
29°	1860.2	1895.6	1957.9	2053.6	2193.2	2311.6	2386.6	2412.1	2396.0	2348.9	2266.8
29.5°	1839.5	1874.8	1937.6	2033.8	2174.3	2294.2	2371.5	2396.5	2380.9	2333.3	2249.8
30°	1818.2	1853.6	1917.3	2013.5	2155.5	2277.6	2355.5	2381.4	2365.8	2317.3	2232.4
30.5°	1797.0	1832.9	1895.6	1992.8	2136.6	2259.7	2339.0	2365.8	2350.3	2300.8	2214.9
31°	1775.8	1811.6	1874.8	1972.5	2117.3	2241.8	2322.5	2350.3	2334.2	2284.2	2197.5
31.5°	1754.6	1790.4	1853.1	1951.3	2097.5	2223.4	2305.9	2333.8	2317.3	2267.3	2179.1
32°	1732.9	1769.2	1831.9	1930.0	2077.2	2206.0	2289.0	2317.3	2301.2	2250.3	2161.1
32.5°	1711.2	1747.5	1810.2	1909.3	2057.4	2187.1	2272.0	2300.3	2284.7	2232.8	2142.7
33°	1689.0	1725.3	1789.0	1888.1	2037.6	2167.7	2254.1	2283.3	2267.3	2215.4	2124.4
33.5°	1667.3	1703.6	1766.8	1865.9	2016.8	2148.9	2236.1	2266.3	2249.8	2197.5	2106.0
34°	1645.1	1681.9	1745.1	1844.7	1996.1	2129.5	2217.7	2248.9	2231.9	2179.1	2086.1
34.5°	1622.5	1659.8	1722.5	1822.5	1974.4	2109.3	2199.3	2230.5	2214.0	2160.7	2066.8
35°	1599.9	1637.1	1700.8	1800.3	1953.6	2089.5	2181.0	2212.6	2196.0	2142.3	2047.5
35.5°	1577.7	1615.0	1677.7	1778.6	1932.4	2069.6	2161.6	2194.2	2178.1	2123.9	2028.1
36°	1555.1	1592.3	1656.0	1756.5	1910.7	2048.9	2142.7	2175.8	2159.7	2104.5	2007.9
36.5°	1532.4	1569.7	1633.4	1733.8	1889.0	2028.1	2123.4	2156.9	2140.4	2086.1	1988.0
37°	1509.3	1546.6	1609.8	1711.2	1866.8	2007.4	2103.6	2137.6	2121.5	2066.3	1967.8
37.5°	1486.2	1523.9	1587.6	1688.5	1844.7	1986.2	2083.3	2118.2	2102.2	2047.0	1947.0
38°	1462.6	1500.8	1565.0	1665.9	1823.0	1964.9	2063.5	2098.9	2082.8	2026.7	1926.3
38.5°	1440.0	1478.2	1541.9	1643.3	1800.3	1943.2	2042.8	2079.1	2063.5	2007.4	1906.4
39°	1417.3	1454.6	1519.2	1620.1	1778.2	1921.5	2022.5	2059.3	2043.2	1987.1	1885.2
39.5°	1393.3	1432.0	1496.1	1597.5	1756.0	1899.8	2001.7	2039.0	2023.9	1966.8	1864.5
40°	1369.2	1408.4	1473.5	1574.4	1732.9	1877.7	1980.5	2018.7	2003.6	1946.5	1842.8
40.5°	1346.1	1384.8	1449.4	1551.3	1709.3	1856.0	1959.3	1997.9	1982.9	1926.3	1822.0
41°	1322.5	1361.2	1426.8	1528.2	1686.7	1832.9	1937.6	1977.2	1962.6	1905.0	1800.3
41.5°	1298.5	1338.1	1403.2	1504.6	1664.5	1810.7	1916.4	1956.4	1942.3	1884.8	1779.1
42°	1274.4	1314.0	1380.1	1482.0	1640.4	1788.1	1894.7	1935.2	1921.1	1863.5	1757.4
42.5°	1250.8	1290.9	1357.4	1458.8	1618.3	1765.9	1873.0	1914.0	1900.3	1842.8	1735.7
43°	1227.3	1267.3	1333.9	1435.7	1594.7	1743.3	1850.8	1892.8	1879.1	1821.1	1714.0
43.5°	1203.2	1243.8	1310.7	1412.6	1572.0	1720.6	1829.1	1871.5	1858.3	1799.9	1692.3



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**CANDELA DISTRIBUTION (continued):**

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
45°	1130.6	1172.5	1240.9	1343.3	1501.8	1651.8	1761.6	1806.0	1793.7	1735.7	1626.8
45.5°	1106.5	1149.4	1218.8	1320.6	1480.1	1628.6	1739.5	1784.3	1772.5	1714.0	1605.1
46°	1082.5	1125.4	1195.2	1297.5	1456.0	1605.1	1716.8	1762.6	1750.8	1693.3	1583.8
46.5°	1057.5	1102.3	1172.5	1274.9	1432.9	1582.9	1695.1	1741.4	1730.5	1672.5	1563.1
47°	1032.9	1078.2	1149.4	1252.3	1409.8	1560.2	1673.4	1720.1	1710.2	1652.2	1542.3
47.5°	1009.4	1054.6	1126.8	1229.6	1388.1	1538.1	1652.2	1699.9	1689.5	1631.5	1521.1
48°	985.3	1031.5	1103.7	1207.0	1365.0	1516.4	1630.5	1679.1	1669.2	1611.2	1500.8
48.5°	961.2	1007.9	1081.0	1185.3	1343.3	1494.7	1609.8	1658.4	1648.4	1590.0	1479.1
49°	936.7	984.8	1058.4	1163.1	1320.6	1472.0	1587.6	1636.7	1626.8	1567.3	1457.0
49.5°	913.1	961.7	1036.2	1140.9	1298.0	1449.9	1565.4	1615.0	1603.6	1543.3	1432.4
50°	888.6	938.1	1014.1	1117.8	1275.4	1426.8	1541.4	1589.5	1576.8	1516.9	1407.9
50.5°	864.6	915.0	991.0	1096.1	1252.7	1401.8	1515.0	1562.1	1548.5	1487.1	1380.1
51°	839.6	892.4	968.8	1073.0	1228.7	1375.4	1487.6	1531.9	1515.0	1456.0	1352.2
51.5°	816.4	869.3	946.6	1049.9	1203.7	1349.4	1458.8	1500.3	1482.9	1423.9	1321.6
52°	792.4	846.2	924.0	1026.8	1179.1	1321.1	1427.7	1466.4	1449.4	1390.5	1290.0
52.5°	768.8	823.5	901.8	1002.7	1152.7	1292.3	1395.6	1431.5	1413.6	1355.5	1257.4
53°	745.2	800.9	879.2	979.2	1125.9	1263.1	1362.2	1396.1	1379.1	1320.6	1225.4
53.5°	721.6	778.2	856.1	955.1	1099.9	1232.9	1328.2	1360.7	1341.9	1284.8	1191.9
54°	697.6	755.6	833.4	930.1	1072.6	1201.8	1294.7	1325.4	1304.6	1249.0	1158.9
54.5°	674.5	733.0	810.8	906.5	1046.6	1171.6	1259.8	1288.6	1267.8	1213.1	1125.4
55°	651.4	710.8	788.1	882.9	1018.8	1140.5	1225.4	1252.7	1231.5	1177.3	1092.4
55.5°	627.8	688.6	764.6	858.4	991.9	1109.3	1189.5	1216.4	1193.8	1140.5	1057.9
56°	605.6	666.0	741.9	833.9	964.1	1076.8	1154.6	1179.6	1156.0	1103.2	1024.4
56.5°	582.5	643.3	719.3	809.4	936.7	1044.7	1118.8	1142.8	1119.7	1067.4	990.5
57°	559.9	621.2	696.2	784.8	908.4	1012.7	1084.3	1105.6	1082.5	1032.0	957.5
57.5°	537.2	599.0	673.1	760.3	881.5	981.1	1048.5	1069.3	1046.1	995.2	923.5
58°	515.5	577.3	650.9	735.8	853.2	948.5	1015.0	1032.9	1010.8	959.4	890.5
58.5°	493.8	555.1	627.8	711.7	825.4	916.9	979.6	997.1	974.4	924.5	857.9
59°	471.7	533.9	605.6	686.7	797.1	884.8	944.7	961.2	938.6	890.5	824.9
59.5°	450.4	512.2	583.0	662.7	770.2	853.2	910.8	925.4	903.2	855.6	792.4
60°	429.2	491.0	561.3	639.1	741.9	822.1	876.8	890.5	868.8	822.1	761.7
60.5°	408.0	469.3	539.1	615.0	714.6	790.5	842.4	856.1	834.8	789.1	730.1
61°	387.2	449.0	516.9	591.0	686.7	760.3	809.4	822.1	800.9	757.5	699.9
61.5°	367.4	428.3	495.7	567.4	660.3	730.6	776.8	788.1	767.9	725.9	670.7
62°	347.1	408.0	475.0	544.3	633.0	701.4	745.7	755.6	735.3	695.2	641.9
62.5°	327.3	387.7	453.3	521.2	607.0	671.6	712.2	722.6	703.2	665.0	613.2
63°	308.5	368.4	432.5	498.1	580.6	641.9	681.1	690.5	672.6	634.9	585.3
63.5°	290.1	348.6	411.8	475.4	555.1	614.6	650.4	659.4	640.5	606.6	558.9
64°	271.7	329.7	391.0	452.8	529.7	585.8	621.6	629.2	608.9	580.1	533.4
64.5°	254.7	311.3	370.7	430.6	505.1	558.4	591.9	599.0	578.7	552.8	508.4
65°	238.2	293.4	350.9	408.9	481.1	532.0	563.2	570.7	549.5	526.8	483.9
65.5°	221.7	275.0	331.1	388.2	458.0	506.1	535.8	542.4	519.3	500.9	460.8
66°	206.6	258.0	311.3	366.5	434.9	480.1	509.4	514.6	491.0	476.4	438.2





TEST NUMBER: P776657

CATALOG NUMBER: HCDJBL54050CSD-HCD61TRH-HCD61TRLWW-5000lm-3500K

**CANDELA DISTRIBUTION (continued):**

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
67.5°	167.0	208.0	255.6	306.6	369.8	410.8	434.4	438.2	415.1	408.9	377.3
68°	158.5	192.4	238.2	288.2	348.1	389.1	412.7	415.5	392.4	387.2	357.0
68.5°	149.5	177.8	221.2	269.3	328.7	367.4	391.0	393.4	369.3	365.5	336.8
69°	141.0	166.0	205.2	251.9	309.4	345.7	369.3	371.2	346.2	344.3	318.8
69.5°	132.1	154.7	189.6	233.9	290.5	325.0	347.1	349.0	325.9	325.0	300.9
70°	127.8	143.4	175.5	218.4	272.6	306.1	327.8	330.2	307.1	306.6	283.9
70.5°	123.1	131.6	164.1	202.8	255.6	288.2	309.9	311.8	289.1	289.6	268.4
71°	117.9	120.3	152.8	187.7	239.6	270.7	292.0	293.8	272.1	272.6	252.8
71.5°	112.7	115.1	141.0	174.0	223.6	253.8	274.5	276.4	255.6	256.6	237.7
72°	107.1	110.4	129.7	162.7	208.5	238.7	258.5	260.8	240.1	241.0	223.6
72.5°	101.9	105.7	118.4	151.4	193.9	223.1	243.4	245.3	225.5	226.9	209.9
73°	96.7	100.5	109.4	140.1	180.6	208.9	228.8	231.1	211.3	212.2	196.7
73.5°	91.5	95.7	101.4	128.3	167.9	195.3	214.1	217.0	198.6	199.5	184.4
74°	86.8	91.0	94.3	117.0	155.6	182.5	201.4	203.8	185.4	186.8	172.6
74.5°	81.6	86.3	88.2	108.0	143.9	169.8	188.7	191.0	173.1	174.5	161.3
75°	77.4	81.6	82.5	99.5	133.0	158.0	176.9	178.8	161.3	163.2	150.0
75.5°	72.6	77.4	77.8	91.5	123.1	147.2	165.1	167.4	150.0	151.9	139.6
76°	68.4	72.6	73.1	84.4	113.2	136.3	153.8	156.1	138.7	141.0	129.7
76.5°	64.1	68.4	69.3	77.4	104.2	126.4	143.4	145.3	128.3	131.1	120.3
77°	59.9	64.1	65.1	71.2	95.7	117.0	133.0	135.4	117.9	121.2	111.3
77.5°	56.1	60.4	61.3	65.6	87.7	108.0	123.6	125.5	108.5	111.8	102.8
78°	51.9	56.1	57.5	60.4	80.2	99.5	114.1	116.0	99.0	102.8	94.3
78.5°	48.6	52.4	53.8	55.2	73.1	91.0	105.2	107.1	89.6	94.8	86.3
79°	44.8	48.6	50.5	50.5	66.5	83.5	96.7	98.1	81.1	86.3	78.8
79.5°	41.5	44.8	47.2	46.2	60.4	75.9	88.7	90.1	73.1	78.8	71.7
80°	38.2	41.5	43.9	42.4	54.7	68.9	80.7	82.1	65.1	71.2	64.6
80.5°	34.9	38.2	40.6	38.7	49.5	62.3	73.1	74.5	57.1	64.1	58.0
81°	31.6	34.9	37.3	35.4	44.8	56.1	66.0	67.4	50.5	57.5	51.9
81.5°	28.8	32.1	34.4	32.5	40.6	50.5	59.0	60.4	44.3	51.4	46.7
82°	25.9	28.8	31.6	29.7	36.3	45.3	52.4	54.2	37.7	46.2	41.5
82.5°	23.1	25.9	28.8	26.9	32.1	40.6	47.2	48.6	31.1	41.0	36.3
83°	20.3	23.1	25.9	24.5	27.8	35.8	42.0	43.4	25.0	35.8	31.1
83.5°	17.5	20.3	23.1	22.2	24.5	31.1	36.8	38.2	19.8	30.2	25.9
84°	15.1	17.5	20.8	19.8	21.2	26.4	31.1	32.5	14.6	25.0	22.2
84.5°	12.7	15.1	18.4	17.5	18.4	22.6	25.9	27.4	10.4	20.8	18.4
85°	10.4	12.7	16.0	15.6	16.0	18.9	21.7	22.2	7.1	17.0	15.1
85.5°	8.0	10.4	14.1	13.7	13.7	16.0	17.9	17.9	4.7	13.2	11.8
86°	6.1	8.5	11.8	11.8	11.3	12.7	14.6	13.7	3.3	9.9	9.0
86.5°	5.2	6.6	9.4	9.4	9.4	10.4	11.3	10.4	2.8	7.1	6.6
87°	3.8	5.2	7.5	7.5	7.5	8.0	8.5	7.5	1.9	4.7	4.7
87.5°	2.8	3.8	5.7	5.7	6.1	6.1	6.1	5.2	1.4	2.8	2.8
88°	1.9	2.8	3.8	4.2	4.7	4.2	3.8	2.8	0.9	1.4	1.4
88.5°	0.9	1.4	2.4	2.4	2.8	2.4	1.9	1.4	0.5	0.5	0.5



TEST NUMBER: P776657

CATALOG NUMBER: HCDJBS4050CSD-HCD61TRH-HCD61TRLWW-5000lm-3500K

**CANDELA DISTRIBUTION (continued):**

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



TEST NUMBER: P776657

CATALOG NUMBER: HCDJBL54050CSD-HCD61TRH-HCD61TRLWW-5000lm-3500K

**CANDELA DISTRIBUTION (continued):**

	247.5°	270°	292.5°	315°	337.5°	360°
0°	2685.2	2685.2	2685.2	2685.2	2685.2	2685.2
0.5°	2685.6	2684.7	2680.9	2678.6	2677.6	2678.6
1°	2686.1	2682.3	2676.2	2672.9	2671.0	2672.0
1.5°	2685.6	2679.5	2672.0	2666.3	2663.9	2665.3
2°	2685.6	2676.7	2666.8	2659.7	2656.4	2658.3
2.5°	2684.7	2673.4	2661.1	2653.1	2648.8	2650.3
3°	2683.7	2669.6	2655.4	2645.5	2640.8	2642.7
3.5°	2682.3	2665.3	2649.3	2638.0	2632.8	2634.7
4°	2680.4	2661.1	2643.2	2630.0	2624.3	2625.7
4.5°	2678.1	2656.4	2636.6	2621.5	2614.9	2617.2
5°	2675.7	2651.7	2629.5	2613.0	2605.4	2607.8
5.5°	2672.9	2646.0	2622.0	2604.0	2596.0	2598.4
6°	2669.6	2640.3	2613.9	2594.6	2586.1	2588.5
6.5°	2665.8	2634.2	2605.9	2585.2	2575.7	2578.6
7°	2662.0	2628.1	2597.9	2575.3	2564.9	2568.2
7.5°	2657.3	2621.0	2588.9	2564.9	2554.0	2557.3
8°	2653.1	2613.9	2580.0	2554.5	2543.2	2546.0
8.5°	2647.9	2606.9	2570.1	2543.7	2531.4	2534.7
9°	2642.7	2598.8	2560.6	2532.8	2519.6	2523.4
9.5°	2637.0	2590.4	2550.3	2521.0	2507.3	2511.1
10°	2630.9	2582.3	2539.9	2509.2	2495.1	2498.9
10.5°	2624.3	2573.4	2529.0	2497.4	2482.8	2486.6
11°	2617.7	2564.4	2518.2	2485.2	2470.1	2473.9
11.5°	2610.6	2554.5	2506.9	2472.4	2456.9	2460.6
12°	2603.6	2544.6	2495.1	2459.7	2443.2	2447.4
12.5°	2595.5	2534.7	2482.8	2446.0	2429.5	2433.8
13°	2587.5	2524.3	2470.6	2432.8	2415.8	2420.1
13.5°	2579.0	2513.0	2458.3	2419.1	2401.2	2405.9
14°	2570.1	2502.2	2445.1	2405.5	2387.1	2391.8
14.5°	2561.1	2490.4	2431.9	2391.3	2372.4	2377.2
15°	2551.2	2478.6	2418.7	2376.7	2357.4	2362.5
15.5°	2541.3	2466.8	2404.5	2361.6	2342.3	2347.4
16°	2531.4	2454.0	2390.4	2346.5	2327.2	2332.4
16.5°	2521.0	2441.3	2375.7	2331.4	2311.1	2316.8
17°	2510.2	2428.1	2361.1	2315.8	2295.6	2300.8
17.5°	2498.9	2414.9	2346.0	2299.8	2279.1	2285.2
18°	2487.1	2400.7	2330.9	2283.8	2263.0	2268.7
18.5°	2475.3	2386.6	2314.9	2267.3	2246.5	2252.6
19°	2463.0	2372.0	2299.3	2250.8	2229.5	2235.7
19.5°	2450.3	2357.4	2283.3	2233.8	2212.6	2218.7
20°	2437.5	2342.3	2266.8	2217.3	2195.6	2202.2
20.5°	2424.3	2327.2	2249.8	2199.8	2178.1	2184.3
21°	2410.7	2311.1	2232.8	2181.9	2160.2	2166.8



TEST NUMBER: P776657

CATALOG NUMBER: HCDJBL54050CSD-HCD61TRH-HCD61TRLWW-5000lm-3500K

**CANDELA DISTRIBUTION (continued):**

	247.5°	270°	292.5°	315°	337.5°	360°
22.5°	2368.2	2262.5	2180.0	2128.1	2106.4	2113.5
23°	2353.1	2245.1	2162.1	2109.7	2088.0	2095.1
23.5°	2338.5	2228.6	2144.2	2091.3	2069.6	2076.7
24°	2322.9	2210.7	2125.3	2072.5	2050.3	2057.8
24.5°	2306.9	2193.2	2106.9	2053.6	2031.0	2038.5
25°	2290.8	2174.8	2087.6	2034.3	2012.1	2019.6
25.5°	2274.3	2156.9	2068.7	2014.5	1992.8	2000.3
26°	2257.8	2139.0	2048.9	1994.6	1973.0	1981.0
26.5°	2240.4	2119.6	2030.0	1975.3	1953.1	1961.2
27°	2223.4	2100.3	2009.7	1955.5	1933.3	1941.3
27.5°	2206.4	2081.4	1989.9	1935.2	1913.1	1921.1
28°	2188.5	2062.1	1969.2	1914.5	1892.3	1900.8
28.5°	2171.0	2042.8	1949.4	1894.2	1872.5	1880.5
29°	2152.2	2022.5	1928.6	1873.4	1851.3	1860.2
29.5°	2133.8	2002.7	1907.9	1852.7	1830.5	1839.5
30°	2114.9	1982.9	1887.1	1831.5	1809.3	1818.2
30.5°	2096.5	1962.1	1865.9	1810.2	1788.5	1797.0
31°	2077.2	1941.3	1844.2	1789.0	1766.8	1775.8
31.5°	2057.4	1920.6	1823.4	1767.3	1745.6	1754.6
32°	2037.6	1899.4	1801.7	1745.6	1723.4	1732.9
32.5°	2018.2	1878.6	1780.0	1723.9	1702.2	1711.2
33°	1997.9	1857.9	1758.3	1702.2	1680.1	1689.0
33.5°	1977.7	1836.2	1736.6	1680.1	1658.4	1667.3
34°	1957.4	1814.5	1714.5	1657.9	1636.2	1645.1
34.5°	1936.6	1792.8	1691.8	1635.7	1614.0	1622.5
35°	1915.9	1771.1	1669.7	1613.1	1590.9	1599.9
35.5°	1895.1	1748.9	1648.0	1590.4	1569.2	1577.7
36°	1874.4	1727.7	1625.3	1568.3	1546.6	1555.1
36.5°	1853.1	1705.0	1603.2	1545.6	1523.5	1532.4
37°	1831.5	1682.9	1580.1	1522.5	1500.8	1509.3
37.5°	1810.2	1661.2	1557.9	1499.9	1478.2	1486.2
38°	1788.5	1638.5	1534.8	1476.8	1455.1	1462.6
38.5°	1766.8	1615.9	1512.6	1454.1	1432.0	1440.0
39°	1745.1	1594.2	1490.0	1431.5	1408.8	1417.3
39.5°	1723.4	1571.6	1467.3	1408.4	1385.7	1393.3
40°	1701.3	1548.9	1444.2	1384.8	1362.2	1369.2
40.5°	1679.6	1526.8	1421.6	1362.2	1339.0	1346.1
41°	1657.4	1503.7	1398.9	1339.0	1315.0	1322.5
41.5°	1635.2	1481.5	1375.8	1315.9	1291.4	1298.5
42°	1613.1	1459.3	1353.2	1292.8	1268.3	1274.4
42.5°	1590.9	1437.1	1331.0	1269.7	1244.7	1250.8
43°	1569.2	1415.0	1308.4	1246.6	1221.1	1227.3
43.5°	1546.6	1391.9	1286.2	1223.5	1197.5	1203.2



TEST NUMBER: P776657

CATALOG NUMBER: HCDJBL54050CSD-HCD61TRH-HCD61TRLWW-5000lm-3500K

**CANDELA DISTRIBUTION (continued):**

	247.5°	270°	292.5°	315°	337.5°	360°
45°	1480.5	1325.4	1218.3	1154.6	1126.8	1130.6
45.5°	1458.4	1303.2	1196.1	1131.5	1102.7	1106.5
46°	1436.7	1282.0	1174.4	1109.3	1079.2	1082.5
46.5°	1415.4	1260.7	1152.7	1086.2	1055.6	1057.5
47°	1394.2	1239.5	1130.6	1063.6	1032.0	1032.9
47.5°	1373.0	1217.8	1108.9	1041.0	1008.9	1009.4
48°	1352.7	1198.0	1087.6	1018.3	985.3	985.3
48.5°	1332.0	1176.8	1066.0	996.1	961.2	961.2
49°	1310.3	1155.6	1045.2	974.4	938.1	936.7
49.5°	1287.2	1134.3	1024.4	952.3	915.0	913.1
50°	1263.6	1112.2	1003.2	930.1	891.4	888.6
50.5°	1238.6	1089.1	981.1	908.4	868.8	864.6
51°	1213.1	1066.0	959.8	886.7	845.2	839.6
51.5°	1186.7	1041.9	938.1	865.0	822.6	816.4
52°	1159.8	1017.8	916.0	843.8	799.9	792.4
52.5°	1131.5	992.8	893.3	821.6	776.8	768.8
53°	1103.7	967.8	870.7	799.9	754.7	745.2
53.5°	1074.0	942.4	848.0	777.8	732.0	721.6
54°	1044.3	916.9	824.9	756.5	709.8	697.6
54.5°	1014.5	891.4	801.8	734.4	687.7	674.5
55°	985.3	865.5	778.2	712.2	666.0	651.4
55.5°	954.6	838.6	755.1	690.0	643.3	627.8
56°	924.5	812.7	731.5	668.3	621.6	605.6
56.5°	894.7	786.7	708.4	646.2	600.0	582.5
57°	865.0	760.3	684.4	624.5	578.3	559.9
57.5°	834.8	733.9	660.8	601.8	556.6	537.2
58°	805.6	708.0	637.7	580.6	535.8	515.5
58.5°	776.8	682.0	614.6	558.4	514.1	493.8
59°	747.1	656.1	591.5	536.7	492.9	471.7
59.5°	718.8	630.1	568.3	515.5	472.1	450.4
60°	690.5	605.1	545.7	494.3	451.4	429.2
60.5°	662.7	580.1	523.1	473.1	430.6	408.0
61°	634.9	555.6	500.9	452.3	410.3	387.2
61.5°	608.0	532.0	478.7	432.0	390.5	367.4
62°	582.5	508.4	457.0	411.8	371.2	347.1
62.5°	556.1	485.3	435.8	391.5	351.9	327.3
63°	530.6	462.2	415.1	371.7	333.0	308.5
63.5°	505.6	440.5	394.3	352.3	314.1	290.1
64°	481.6	418.8	374.0	333.0	296.2	271.7
64.5°	458.5	398.1	354.2	314.1	278.3	254.7
65°	435.8	377.3	334.9	295.7	261.8	238.2
65.5°	414.6	357.5	316.0	277.3	244.8	221.7
66°	393.8	337.7	297.1	259.9	228.8	206.6



TEST NUMBER: P776657

CATALOG NUMBER: HCDJBL54050CSD-HCD61TRH-HCD61TRLWW-5000lm-3500K

**CANDELA DISTRIBUTION (continued):**

	247.5°	270°	292.5°	315°	337.5°	360°
67.5°	333.5	283.5	245.3	209.9	183.5	167.0
68°	315.1	266.5	228.8	195.3	170.3	158.5
68.5°	297.6	250.5	213.7	180.6	159.9	149.5
69°	280.6	234.9	198.1	166.5	150.0	141.0
69.5°	264.6	220.3	183.9	155.6	140.1	132.1
70°	249.0	205.6	171.2	144.8	129.7	127.8
70.5°	234.4	192.0	160.4	134.0	119.8	123.1
71°	219.8	179.2	149.5	123.1	115.1	117.9
71.5°	206.6	166.5	138.7	114.6	110.8	112.7
72°	193.4	156.1	127.8	107.1	106.1	107.1
72.5°	181.1	145.7	117.0	100.0	100.9	101.9
73°	168.9	135.4	108.0	93.4	95.7	96.7
73.5°	157.5	124.5	100.0	87.7	91.0	91.5
74°	146.7	115.6	92.4	83.0	86.3	86.8
74.5°	136.8	106.6	85.4	78.8	81.6	81.6
75°	126.9	98.6	79.2	75.0	77.4	77.4
75.5°	117.4	90.6	73.1	70.7	72.6	72.6
76°	108.5	83.5	67.9	67.0	68.4	68.4
76.5°	100.5	76.4	62.7	63.2	64.1	64.1
77°	92.4	69.8	58.0	59.4	60.4	59.9
77.5°	84.9	64.1	53.8	55.7	56.6	56.1
78°	77.4	58.0	49.5	52.4	52.8	51.9
78.5°	70.7	52.8	45.8	49.1	49.1	48.6
79°	64.1	48.1	42.4	45.8	45.3	44.8
79.5°	58.5	43.4	39.1	42.4	42.0	41.5
80°	52.8	39.1	36.3	39.1	38.7	38.2
80.5°	47.2	35.4	34.0	36.3	35.4	34.9
81°	42.9	31.6	31.1	33.5	32.1	31.6
81.5°	38.7	28.3	28.8	30.7	29.2	28.8
82°	34.0	25.5	25.9	27.8	25.9	25.9
82.5°	29.7	22.6	23.6	25.0	23.1	23.1
83°	25.0	19.8	21.2	22.6	20.3	20.3
83.5°	21.7	17.5	18.9	20.3	17.5	17.5
84°	18.4	15.1	17.0	17.9	15.6	15.1
84.5°	15.6	13.2	14.6	15.6	13.2	12.7
85°	12.7	11.3	12.7	13.2	10.8	10.4
85.5°	10.4	9.0	10.4	11.3	8.5	8.0
86°	8.0	7.5	8.5	9.0	7.1	6.1
86.5°	6.1	5.7	6.6	7.1	5.7	5.2
87°	4.2	4.2	4.7	5.2	4.2	3.8
87.5°	2.8	2.4	2.8	3.3	2.8	2.8
88°	1.9	0.9	1.4	1.9	1.9	1.9
88.5°	0.5	0.5	0.5	0.5	0.9	0.9



TEST NUMBER: P776657

CATALOG NUMBER: HCDJBL54050CSD-HCD61TRH-HCD61TRLWW-5000lm-3500K

**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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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°	2149.4	2181.9	2239.9	2322.9	2433.8	2522.9	2579.0	2598.8	2587.1	2549.3	2484.2
22°	2131.4	2164.4	2222.9	2306.9	2420.6	2511.1	2569.1	2588.5	2576.2	2537.5	2472.0



44°	1178.2	1219.7	1287.6	1389.5	1548.5	1697.0	1806.5	1849.4	1836.6	1778.6	1670.6
44.5°	1154.6	1196.1	1264.5	1366.9	1525.3	1674.4	1784.3	1827.7	1815.4	1757.4	1648.9



66.5°	192.0	241.0	292.4	346.2	413.2	455.6	483.5	488.2	463.6	451.8	417.9
67°	178.3	224.5	274.0	325.9	391.5	432.5	458.9	462.7	438.2	430.2	397.6



89°	0.5	0.5	0.9	0.9	1.9	1.4	0.9	0.5	0.0	0.0	0.0
89.5°	0.0	0.5	0.5	0.5	0.5	0.5	0.0	0.0	0.0	0.0	0.0



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21.5°	2397.0	2295.1	2215.9	2164.0	2142.3	2149.4
22°	2382.4	2279.1	2197.9	2146.5	2124.4	2131.4



44°	1524.4	1369.7	1263.1	1200.4	1173.5	1178.2
44.5°	1501.8	1347.5	1240.9	1177.3	1150.4	1154.6



66.5°	372.6	319.3	279.2	242.0	213.2	192.0
67°	351.9	300.4	261.8	226.4	198.1	178.3

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Scaled Data Report



89°	0.0	0.0	0.0	0.0	0.5	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)