

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: P776556

Luminaire Tested: HCDJBL54050CSD-HCD41TRH-HCD41TRLWW-5000lm-3000K

Issue Date: 2/13/2024

Test Information

Test Method: LM-79-2019
Report Number: P776556
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (A2312156B034)
Test Lab:
Issue Date: 2/13/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: HALO COMMERCIAL
Catalog Number: HCDJBS4050CSD-HCD41TRH-HCD41TRLWW-5000lm-3000K
Description: 4 INCH ROUND SHALLOW-WIDE LENSED WALLWASH KIT
Light Source: SELECTABLE LUMENS AND CCT ARRAY 90CRI / 3000K CCT
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 5562.3 lumens
Efficiency: N/A
Efficacy: 115.9 lumens/watt
Spacing Criteria (0/90/45): 1.16 / 1.14 / 1.22
Luminous Opening: Circular (Dia: 0.33' x H: 0')
CIE Type: Direct

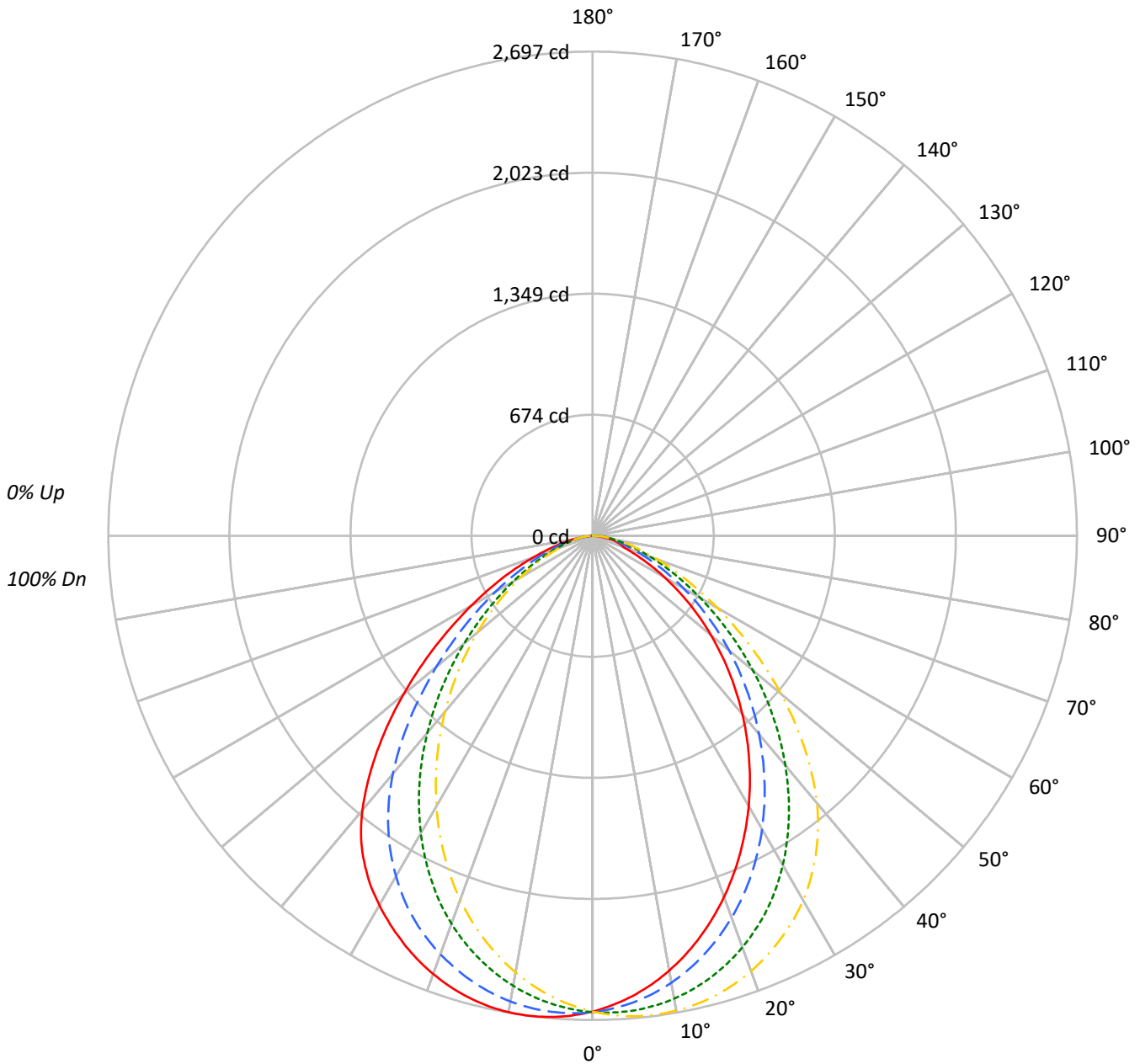
Input Watts (W): 48
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT



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Luminous Intensity Polar Plot





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COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

RF	20					20					20					20					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	110	106	103	99	108	104	101	98	100	97	95	96	94	92	93	91	89	87				
2	102	95	89	84	99	93	87	83	89	85	81	86	82	79	83	80	77	75				
3	94	84	77	71	91	83	76	71	80	74	70	77	72	68	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	60	54	65	59	53	63	57	53	62	56	52	50				
6	74	62	54	48	73	61	53	48	59	53	47	58	52	47	56	51	47	45				
7	69	57	49	43	68	56	48	43	54	48	42	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	45	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°	333666	333666	333666	333666
5°	324960	335243	339880	330594
10°	314290	334545	344346	325280
15°	301411	331690	347012	317828
20°	286670	326633	347861	307897
25°	270249	319044	347053	294577
30°	252564	307742	345161	278024
35°	233447	292719	340776	258228
40°	213045	274373	327519	235191
45°	191345	252658	302118	209712
50°	168279	227975	269384	183022
55°	143298	201333	233345	155234
60°	116185	174101	196905	128921
65°	88591	148536	163187	105327
70°	67042	125695	128455	84152
75°	70311	105078	100799	67151
80°	64357	91970	71749	51529
85°	32200	93280	20071	27580

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 67.5°
 Vertical Angle: 89.5°
 Luminance: 341790 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	249.7	4.5
10°-20°	701.2	12.6
20°-30°	1019.7	18.3
30°-40°	1142.1	20.5
40°-50°	1033.3	18.6
50°-60°	750.4	13.5
60°-70°	429.3	7.7
70°-80°	190.6	3.4
80°-90°	46.1	0.8
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°	1970.5	35.4
0°-40°	3112.6	56.0
0°-60°	4896.3	88.0
0°-90°	5562.3	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	5562.3	100.0

CANDELA DISTRIBUTION:

	0°	90°	180°	270°	360°	Flux
0°	2651	2651	2651	2651	2651	
5°	2572	2654	2690	2617	2572	242
15°	2313	2546	2663	2439	2313	650
25°	1946	2298	2499	2121	1946	894
35°	1520	1905	2218	1681	1520	948
45°	1075	1420	1698	1178	1075	829
55°	653	918	1064	708	653	584
65°	298	499	548	354	298	300
75°	145	216	207	138	145	149
85°	22	65	14	19	22	35
90°	0	14	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°	2651.3	2651.3	2651.3	2651.3	2651.3	2651.3	2651.3	2651.3	2651.3	2651.3	2651.3
0.5°	2643.9	2650.4	2650.4	2649.9	2655.0	2655.0	2655.5	2655.5	2655.5	2659.2	2655.5
1°	2636.9	2645.3	2647.1	2649.0	2656.4	2658.3	2660.2	2661.1	2660.6	2663.0	2657.8
1.5°	2630.4	2640.2	2643.4	2647.6	2656.9	2661.6	2664.8	2666.2	2665.7	2666.7	2659.7
2°	2623.0	2634.1	2639.7	2645.8	2657.8	2663.9	2669.0	2671.3	2670.4	2669.9	2661.1
2.5°	2615.5	2628.1	2635.5	2643.9	2657.8	2666.2	2672.7	2675.5	2674.6	2672.7	2662.0
3°	2607.2	2621.6	2630.9	2641.6	2657.8	2668.1	2676.0	2679.7	2678.8	2675.0	2662.5
3.5°	2599.3	2614.6	2625.8	2638.8	2657.4	2669.9	2679.2	2683.4	2682.0	2677.4	2663.0
4°	2590.4	2607.6	2620.7	2635.5	2656.4	2671.3	2682.0	2686.7	2685.3	2678.8	2662.5
4.5°	2581.6	2600.2	2614.6	2632.3	2655.0	2672.2	2684.3	2689.9	2688.1	2680.2	2662.0
5°	2572.3	2591.8	2608.6	2628.6	2653.7	2672.7	2686.2	2692.7	2690.4	2681.1	2661.6
5.5°	2562.6	2583.9	2602.1	2624.4	2651.8	2672.7	2687.6	2694.6	2692.2	2682.0	2660.2
6°	2552.3	2575.1	2595.1	2619.7	2649.5	2672.2	2689.0	2696.9	2694.1	2682.0	2658.8
6.5°	2542.1	2566.3	2588.1	2614.6	2646.7	2671.8	2689.9	2698.3	2695.5	2682.0	2656.9
7°	2531.4	2557.0	2580.7	2609.5	2643.4	2670.9	2690.4	2699.2	2696.4	2681.5	2654.6
7.5°	2520.3	2547.2	2572.8	2603.9	2640.2	2669.9	2690.4	2700.1	2696.9	2680.6	2652.3
8°	2508.6	2537.0	2564.4	2597.9	2636.5	2668.1	2690.4	2700.6	2697.3	2679.7	2649.0
8.5°	2497.0	2526.3	2555.6	2591.4	2632.3	2665.7	2689.9	2700.6	2696.9	2678.3	2645.8
9°	2484.9	2515.6	2546.7	2584.9	2628.1	2663.4	2688.5	2700.6	2696.4	2676.0	2642.5
9.5°	2471.9	2504.4	2537.5	2577.4	2623.0	2660.6	2687.6	2699.7	2696.0	2674.1	2638.3
10°	2459.4	2492.8	2527.7	2570.0	2617.9	2657.8	2685.7	2698.7	2694.6	2671.3	2634.1
10.5°	2445.9	2480.7	2517.5	2562.1	2611.8	2654.1	2683.9	2697.3	2693.2	2668.5	2629.5
11°	2432.9	2469.1	2507.2	2554.2	2605.8	2650.4	2681.5	2695.5	2690.8	2665.3	2624.4
11.5°	2418.5	2456.1	2496.5	2545.8	2599.7	2646.2	2678.8	2693.6	2689.0	2661.6	2619.3
12°	2404.5	2444.0	2485.4	2536.5	2593.2	2641.6	2676.0	2691.3	2686.2	2657.8	2613.7
12.5°	2390.1	2430.5	2473.8	2527.7	2586.3	2636.9	2672.2	2688.5	2683.4	2653.7	2607.6
13°	2375.2	2417.1	2462.1	2517.9	2578.8	2631.8	2668.5	2685.3	2680.2	2649.0	2601.6
13.5°	2360.4	2403.1	2450.1	2507.7	2571.4	2626.2	2664.8	2681.5	2676.4	2643.9	2594.6
14°	2345.0	2389.2	2437.5	2497.5	2563.0	2620.2	2660.2	2677.8	2672.2	2638.8	2587.7
14.5°	2329.2	2374.8	2424.5	2486.8	2554.6	2613.7	2655.5	2673.6	2667.6	2633.2	2580.2
15°	2313.4	2360.4	2411.9	2476.1	2545.8	2607.2	2650.4	2669.5	2663.4	2627.2	2573.2
15.5°	2297.1	2344.6	2398.0	2464.5	2536.5	2600.2	2644.8	2664.3	2658.3	2620.7	2564.9
16°	2280.9	2329.7	2384.5	2452.9	2526.8	2592.8	2638.8	2659.2	2652.7	2614.1	2556.5
16.5°	2263.7	2314.3	2370.1	2441.2	2517.5	2585.3	2632.7	2653.7	2646.7	2607.2	2548.1
17°	2246.9	2298.5	2356.2	2429.1	2507.2	2577.4	2626.2	2648.1	2641.1	2599.7	2539.3
17.5°	2229.7	2282.3	2341.3	2416.1	2496.5	2569.1	2619.3	2641.6	2634.6	2591.8	2530.0
18°	2212.5	2266.0	2326.4	2403.1	2485.9	2560.2	2612.3	2635.1	2627.6	2584.4	2520.7
18.5°	2194.4	2249.3	2311.1	2389.6	2474.7	2551.4	2604.8	2628.1	2620.7	2576.0	2510.5
19°	2176.3	2232.1	2295.7	2375.7	2463.1	2542.1	2596.9	2621.1	2613.2	2567.2	2500.7
19.5°	2158.6	2214.9	2279.5	2361.7	2451.5	2532.3	2588.6	2613.2	2605.3	2558.4	2490.5
20°	2140.5	2197.7	2263.7	2347.8	2438.9	2522.6	2580.2	2605.3	2597.4	2549.5	2479.8
20.5°	2121.4	2180.0	2247.4	2332.9	2426.4	2512.4	2571.4	2597.4	2589.0	2539.8	2468.7
21°	2102.8	2161.9	2230.7	2318.1	2413.3	2501.7	2562.1	2588.6	2580.2	2530.0	2457.5



TEST NUMBER: P776556

CATALOG NUMBER: HCDJBL34050CSD-HCD41TRH-HCD41TRLWW-5000lm-3000K

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
22.5°	2045.2	2107.0	2179.1	2271.1	2372.4	2467.7	2532.8	2561.2	2552.3	2498.9	2421.7
23°	2026.1	2088.4	2161.4	2255.3	2358.5	2455.6	2522.6	2551.4	2542.1	2488.2	2409.2
23.5°	2006.2	2068.9	2143.3	2238.6	2343.6	2443.1	2511.9	2541.6	2532.3	2477.0	2396.6
24°	1986.2	2050.8	2125.2	2221.4	2328.7	2431.0	2500.7	2530.9	2521.6	2465.4	2383.1
24.5°	1966.2	2031.3	2106.6	2204.2	2313.4	2417.5	2489.6	2520.3	2511.0	2453.8	2369.2
25°	1946.2	2011.3	2087.5	2187.0	2297.6	2404.5	2478.0	2509.6	2499.3	2442.2	2355.2
25.5°	1925.7	1991.8	2068.4	2168.8	2281.3	2390.6	2466.3	2497.9	2488.2	2430.1	2340.8
26°	1905.8	1972.2	2048.5	2150.7	2265.1	2376.2	2454.2	2486.8	2477.0	2417.5	2326.0
26.5°	1884.8	1952.2	2029.4	2131.7	2247.9	2361.7	2441.7	2475.2	2464.9	2404.5	2310.6
27°	1864.4	1931.8	2009.9	2113.5	2230.2	2347.3	2429.1	2463.5	2452.9	2391.5	2294.3
27.5°	1843.5	1911.3	1989.9	2094.5	2212.5	2331.5	2416.1	2451.5	2440.8	2378.5	2278.1
28°	1822.6	1890.9	1969.0	2074.5	2194.4	2315.7	2402.7	2438.4	2427.8	2365.0	2261.3
28.5°	1801.6	1870.4	1949.5	2054.5	2175.8	2299.5	2388.2	2426.4	2415.2	2350.1	2243.7
29°	1780.3	1849.5	1929.0	2034.1	2156.8	2283.2	2374.3	2413.3	2402.2	2335.7	2226.0
29.5°	1758.9	1828.6	1908.5	2014.1	2137.2	2265.5	2359.4	2400.3	2389.2	2320.4	2208.4
30°	1738.0	1807.7	1886.2	1993.6	2117.7	2247.9	2344.6	2386.8	2375.2	2305.0	2190.2
30.5°	1716.1	1786.8	1865.8	1972.2	2098.2	2229.3	2328.7	2372.9	2361.7	2288.8	2171.2
31°	1694.3	1764.9	1844.4	1951.3	2077.7	2210.7	2312.5	2358.5	2347.8	2272.0	2152.1
31.5°	1672.9	1744.0	1823.0	1929.9	2056.8	2191.6	2296.2	2344.1	2333.9	2255.3	2133.1
32°	1651.5	1722.2	1800.7	1908.1	2035.9	2173.0	2279.0	2329.2	2319.0	2238.1	2113.1
32.5°	1629.7	1700.3	1779.3	1887.2	2015.0	2153.0	2260.9	2313.4	2304.6	2220.0	2093.1
33°	1607.8	1678.9	1757.0	1864.4	1993.6	2133.5	2242.8	2297.1	2288.8	2201.4	2072.2
33.5°	1586.0	1657.1	1735.6	1842.5	1971.8	2113.1	2224.2	2280.9	2271.6	2182.3	2051.2
34°	1564.1	1635.2	1712.9	1820.7	1949.9	2092.6	2205.6	2263.7	2253.4	2164.2	2029.4
34.5°	1541.8	1613.4	1691.0	1798.4	1927.1	2071.7	2186.5	2246.0	2235.8	2143.7	2007.6
35°	1519.5	1591.1	1668.2	1775.6	1905.3	2050.3	2167.0	2227.4	2218.1	2123.8	1985.2
35.5°	1497.6	1569.2	1645.9	1752.4	1882.5	2028.9	2147.0	2209.3	2200.5	2102.8	1961.5
36°	1475.3	1546.9	1623.2	1729.6	1859.7	2007.1	2126.5	2189.8	2181.4	2081.5	1938.3
36.5°	1453.5	1525.1	1601.3	1706.8	1837.0	1984.3	2105.6	2170.7	2161.4	2057.8	1913.7
37°	1430.7	1502.8	1579.0	1684.0	1813.7	1961.5	2084.3	2150.3	2140.5	2034.5	1889.0
37.5°	1408.9	1480.0	1555.3	1660.8	1789.6	1938.8	2061.9	2129.8	2119.1	2010.3	1863.9
38°	1386.1	1457.7	1533.0	1637.1	1765.8	1915.1	2039.2	2108.0	2095.4	1985.2	1838.4
38.5°	1364.7	1435.8	1509.7	1613.9	1742.1	1890.9	2016.4	2085.2	2071.7	1959.2	1812.3
39°	1342.4	1413.1	1487.0	1589.7	1718.0	1867.6	1992.7	2060.5	2047.1	1932.7	1784.9
39.5°	1319.6	1391.2	1464.2	1567.4	1693.8	1843.0	1969.0	2035.4	2020.1	1905.3	1757.9
40°	1296.8	1368.9	1441.4	1543.7	1670.1	1818.4	1943.4	2009.0	1993.6	1877.4	1730.1
40.5°	1275.5	1346.6	1418.6	1519.5	1645.0	1792.8	1917.8	1982.9	1966.2	1848.6	1701.7
41°	1252.2	1324.3	1395.4	1495.8	1620.4	1767.7	1890.9	1955.0	1938.3	1819.3	1673.4
41.5°	1230.4	1302.0	1373.1	1472.5	1595.7	1742.1	1865.3	1928.1	1909.5	1789.6	1645.0
42°	1208.1	1279.2	1350.3	1448.4	1570.6	1715.6	1837.4	1899.3	1880.2	1759.3	1615.7
42.5°	1186.2	1257.3	1327.1	1424.7	1545.5	1689.6	1810.0	1871.8	1850.9	1729.6	1586.4
43°	1163.9	1235.0	1304.3	1401.4	1520.9	1663.6	1781.7	1842.5	1821.2	1697.5	1556.7
43.5°	1142.1	1213.2	1281.5	1377.7	1495.8	1636.6	1753.8	1813.3	1790.5	1666.4	1526.9



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
45°	1075.1	1146.7	1213.6	1306.6	1419.6	1554.4	1666.8	1723.1	1697.5	1571.6	1435.8
45.5°	1054.2	1124.4	1190.9	1282.4	1394.5	1526.9	1638.0	1692.9	1665.9	1539.9	1405.6
46°	1031.9	1102.6	1168.6	1258.7	1368.9	1498.6	1607.8	1662.2	1634.3	1508.3	1374.5
46.5°	1010.1	1081.2	1146.2	1235.5	1342.9	1471.2	1578.5	1631.1	1601.8	1476.3	1344.3
47°	988.2	1058.9	1123.9	1211.8	1317.3	1442.8	1548.8	1599.4	1569.7	1444.2	1313.6
47.5°	966.8	1037.0	1101.6	1188.5	1291.7	1414.9	1518.6	1567.8	1537.2	1412.6	1283.8
48°	945.0	1015.2	1079.3	1164.8	1266.6	1387.0	1488.4	1536.7	1505.1	1381.0	1253.6
48.5°	923.6	993.8	1057.0	1141.6	1241.1	1358.7	1458.6	1505.6	1473.0	1349.8	1223.9
49°	902.2	972.4	1035.2	1118.4	1215.5	1330.8	1428.4	1473.5	1440.0	1317.8	1194.6
49.5°	881.3	950.6	1013.8	1095.6	1189.9	1302.9	1398.2	1441.9	1407.9	1287.1	1165.3
50°	859.5	929.6	991.5	1072.8	1164.4	1275.0	1368.0	1409.8	1375.9	1255.5	1136.0
50.5°	838.5	908.3	969.6	1049.1	1139.3	1247.1	1338.2	1377.7	1343.3	1225.3	1106.7
51°	817.6	886.9	948.2	1025.9	1113.7	1218.8	1308.0	1346.6	1311.7	1194.6	1078.8
51.5°	796.7	865.5	926.9	1003.5	1088.6	1191.8	1278.3	1315.0	1279.2	1163.9	1050.5
52°	776.2	844.6	905.9	981.2	1064.0	1163.9	1249.0	1283.4	1247.6	1134.2	1022.6
52.5°	755.8	823.7	884.6	958.9	1039.3	1136.5	1218.8	1251.3	1216.0	1104.4	995.2
53°	734.9	803.2	863.2	935.7	1014.7	1109.1	1189.0	1220.2	1185.3	1075.1	967.8
53.5°	713.5	781.8	842.3	913.8	989.6	1082.6	1159.7	1189.0	1154.1	1045.4	940.8
54°	693.5	761.8	821.8	891.5	965.4	1055.1	1130.4	1158.3	1122.5	1017.0	914.3
54.5°	673.1	740.9	800.9	869.2	941.7	1029.1	1102.1	1126.7	1092.8	988.7	888.3
55°	653.1	721.4	780.4	847.8	917.6	1003.1	1073.7	1097.9	1063.5	960.8	862.7
55.5°	633.1	700.9	760.0	826.0	893.8	977.1	1044.9	1066.8	1032.8	932.9	836.2
56°	613.1	681.4	740.0	804.1	869.7	950.6	1016.1	1037.0	1003.5	905.0	811.6
56.5°	593.1	661.4	720.0	782.8	846.9	925.0	988.2	1007.3	974.3	878.0	787.4
57°	573.6	641.9	700.0	761.8	824.1	899.9	960.8	978.0	945.4	851.5	762.8
57.5°	554.5	622.4	680.0	740.5	801.3	875.3	933.8	949.2	917.1	825.5	739.1
58°	535.0	603.3	660.5	719.5	778.6	850.2	906.4	920.8	889.7	800.0	715.8
58.5°	516.4	584.3	641.5	699.1	756.7	826.0	879.9	892.9	861.8	773.9	692.6
59°	497.8	566.2	622.4	679.1	734.4	801.8	853.4	865.5	834.4	749.3	670.3
59.5°	479.2	547.1	602.4	659.1	713.0	778.1	827.4	838.5	807.9	724.7	648.0
60°	461.6	529.0	583.8	639.6	691.7	754.4	801.8	812.0	782.3	700.9	626.1
60.5°	443.4	510.4	564.8	619.6	670.7	731.6	776.2	785.5	755.8	677.2	604.3
61°	425.8	492.7	546.6	600.5	650.3	708.8	751.6	760.0	731.2	654.0	583.8
61.5°	408.6	475.0	528.0	581.5	630.8	686.5	727.4	734.9	706.1	631.2	563.4
62°	391.8	457.8	510.8	563.4	610.3	664.7	703.3	710.2	682.8	609.8	543.4
62.5°	374.6	440.6	493.2	544.8	591.3	642.8	679.6	685.6	658.6	587.5	523.4
63°	358.8	423.9	476.0	527.1	571.7	621.5	656.3	661.9	634.9	566.2	504.3
63.5°	343.0	407.2	458.8	509.9	553.1	600.5	633.5	638.7	612.6	545.2	485.3
64°	327.7	390.4	443.0	492.7	534.5	580.1	611.2	616.4	590.3	526.2	467.1
64.5°	311.9	374.2	426.2	475.5	516.9	560.1	589.4	594.0	568.5	505.7	449.5
65°	297.5	358.8	410.4	459.2	498.8	540.6	568.5	572.2	548.0	486.7	432.3
65.5°	282.6	343.5	394.6	443.4	481.6	521.1	547.6	551.3	526.6	467.1	415.1
66°	268.2	328.2	379.8	427.6	464.8	502.0	527.1	530.4	504.8	449.0	398.8



TEST NUMBER: P776556

CATALOG NUMBER: HCDJBL54050CSD-HCD41TRH-HCD41TRLWW-5000lm-3000K

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
67.5°	229.2	284.5	335.1	381.2	416.5	448.1	469.5	471.3	443.0	397.0	350.9
68°	217.5	271.0	321.7	366.7	401.6	430.4	450.4	451.8	423.5	379.8	336.5
68.5°	206.8	257.5	307.7	352.3	386.7	413.7	432.7	433.2	404.9	362.6	322.1
69°	196.6	244.5	294.2	338.4	371.4	397.9	415.5	415.5	386.3	345.4	308.2
69.5°	187.8	231.9	281.2	324.4	356.5	382.1	399.3	398.4	367.7	329.1	294.7
70°	182.2	219.9	268.2	311.0	341.6	366.7	383.0	381.2	349.1	313.8	281.2
70.5°	179.0	208.2	256.1	297.5	327.2	350.9	366.7	364.4	333.3	298.4	268.7
71°	175.7	198.0	244.0	284.9	313.8	336.1	350.5	347.2	317.5	284.0	256.1
71.5°	172.4	188.3	232.9	271.9	300.3	321.7	335.6	331.0	301.2	270.1	244.0
72°	169.2	180.4	221.7	259.8	287.3	308.2	320.7	315.6	286.3	256.6	232.4
72.5°	165.0	174.8	211.0	248.2	274.7	294.2	306.3	300.7	271.9	243.6	220.8
73°	160.8	170.6	201.3	236.6	262.2	281.2	293.3	286.3	258.0	230.6	209.6
73.5°	157.1	166.9	191.5	225.4	250.1	268.2	279.4	272.4	244.5	218.0	198.9
74°	152.9	163.2	182.7	214.7	238.5	256.6	266.3	258.9	231.9	205.9	188.3
74.5°	149.2	159.9	173.8	204.5	227.3	244.5	253.8	245.9	219.4	194.3	178.0
75°	144.6	156.2	165.9	194.8	216.1	232.9	242.2	233.3	207.3	183.1	168.3
75.5°	139.9	152.5	160.4	185.0	205.5	221.3	229.6	221.3	195.7	172.0	158.5
76°	134.8	148.3	154.8	176.2	195.7	210.6	218.5	209.2	184.1	161.3	148.7
76.5°	129.2	143.6	149.2	167.3	185.5	200.3	207.3	197.5	173.4	150.6	139.4
77°	124.1	139.0	143.2	159.9	176.2	190.1	196.6	185.9	162.2	140.4	130.6
77.5°	118.5	134.3	139.0	152.9	167.3	180.4	185.9	175.2	151.5	130.1	121.8
78°	113.0	129.2	135.3	146.0	158.5	170.6	175.7	164.5	140.8	120.4	112.5
78.5°	106.9	124.6	131.5	139.0	150.1	161.8	165.9	154.3	130.1	110.6	104.1
79°	100.9	119.0	127.4	132.0	142.2	152.9	156.2	144.1	119.5	100.9	95.8
79.5°	94.8	113.9	123.2	126.0	134.3	144.6	146.9	133.9	109.2	91.6	87.4
80°	88.8	108.3	118.5	119.9	126.9	136.2	138.1	124.1	99.0	82.7	79.5
80.5°	82.3	102.7	113.9	114.8	119.9	128.3	129.2	115.3	88.8	73.4	72.0
81°	75.8	96.7	109.2	109.7	113.0	120.4	120.4	105.5	78.6	65.1	64.6
81.5°	69.3	91.1	104.1	104.6	106.4	113.0	112.0	96.7	68.3	56.7	57.2
82°	62.8	84.6	99.0	99.5	99.9	105.5	103.2	87.9	58.1	49.7	50.2
82.5°	56.2	78.6	93.9	94.8	93.9	98.5	94.8	79.5	50.2	43.2	44.2
83°	48.8	72.0	88.8	89.7	87.9	91.1	86.9	71.1	41.8	36.7	38.1
83.5°	41.8	65.5	83.2	85.5	81.8	84.1	79.0	63.7	33.5	30.2	32.1
84°	34.9	59.0	78.1	80.9	75.8	77.2	71.6	55.8	25.6	23.7	26.0
84.5°	28.4	52.5	72.5	76.2	70.2	70.7	64.6	49.3	17.2	19.1	20.5
85°	22.3	46.0	67.4	71.6	64.6	64.1	57.6	42.8	13.9	14.9	14.9
85.5°	18.1	40.0	62.3	66.9	59.5	58.1	51.1	36.7	11.2	10.7	10.7
86°	15.8	34.9	57.2	61.8	54.4	52.1	45.6	30.2	9.3	7.0	6.5
86.5°	13.0	30.7	52.1	56.7	49.3	46.5	39.5	23.7	7.4	3.7	3.7
87°	10.7	27.0	46.9	51.1	44.6	40.9	33.5	18.6	5.6	1.9	1.4
87.5°	8.4	23.2	41.4	46.0	39.5	35.3	27.4	13.5	4.6	0.9	0.0
88°	6.0	19.5	36.3	40.4	34.4	29.7	21.4	9.3	2.8	0.5	0.0
88.5°	3.7	15.8	30.7	35.3	29.7	24.2	16.3	5.6	1.4	0.0	0.0



TEST NUMBER: P776556

CATALOG NUMBER: HCDJBL54050CSD-HCD41TRH-HCD41TRLWW-5000lm-3000K

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
90°	0.0	5.1	15.3	17.7	13.9	10.2	3.7	0.5	0.0	0.0	0.0



TEST NUMBER: P776556

CATALOG NUMBER: HCDJBL54050CSD-HCD41TRH-HCD41TRLWW-5000lm-3000K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
0°	2651.3	2651.3	2651.3	2651.3	2651.3	2651.3
0.5°	2650.4	2651.3	2647.1	2644.4	2643.4	2643.9
1°	2650.4	2649.0	2643.0	2638.3	2636.5	2636.9
1.5°	2649.9	2646.2	2637.9	2631.8	2629.5	2630.4
2°	2649.0	2643.0	2632.7	2625.3	2622.0	2623.0
2.5°	2647.6	2639.7	2627.2	2618.8	2614.6	2615.5
3°	2646.2	2636.0	2621.1	2610.9	2606.7	2607.2
3.5°	2643.9	2631.8	2615.1	2603.5	2598.3	2599.3
4°	2642.0	2627.2	2608.6	2595.1	2589.0	2590.4
4.5°	2639.2	2622.5	2601.1	2586.7	2579.7	2581.6
5°	2636.0	2616.9	2594.2	2577.9	2570.5	2572.3
5.5°	2632.7	2611.4	2586.3	2568.6	2560.7	2562.6
6°	2629.0	2605.8	2577.9	2558.8	2550.5	2552.3
6.5°	2624.8	2599.3	2570.0	2549.1	2539.8	2542.1
7°	2620.2	2592.8	2561.2	2538.8	2528.6	2531.4
7.5°	2615.5	2585.8	2551.9	2528.2	2517.5	2520.3
8°	2610.4	2578.4	2542.6	2517.0	2505.4	2508.6
8.5°	2604.8	2570.9	2532.3	2505.8	2493.3	2497.0
9°	2599.3	2562.6	2522.6	2494.2	2481.2	2484.9
9.5°	2592.8	2554.2	2511.4	2482.1	2468.2	2471.9
10°	2586.3	2545.4	2500.7	2469.6	2455.2	2459.4
10.5°	2579.7	2536.5	2489.6	2457.0	2442.2	2445.9
11°	2572.3	2526.8	2478.0	2444.0	2428.2	2432.9
11.5°	2564.9	2517.5	2466.3	2431.0	2414.3	2418.5
12°	2557.0	2506.8	2453.8	2417.1	2399.9	2404.5
12.5°	2549.1	2496.5	2441.2	2402.7	2385.5	2390.1
13°	2540.2	2485.9	2428.2	2388.7	2370.6	2375.2
13.5°	2531.4	2474.7	2415.2	2373.8	2354.8	2360.4
14°	2522.1	2463.1	2401.3	2359.0	2339.9	2345.0
14.5°	2512.8	2451.5	2387.8	2343.6	2324.1	2329.2
15°	2503.1	2439.4	2373.4	2328.3	2307.8	2313.4
15.5°	2492.8	2426.4	2358.5	2312.0	2291.6	2297.1
16°	2482.1	2413.8	2343.6	2296.2	2274.8	2280.9
16.5°	2471.4	2401.3	2328.7	2279.9	2258.1	2263.7
17°	2460.3	2387.3	2313.4	2263.2	2240.4	2246.9
17.5°	2449.1	2373.4	2297.1	2246.0	2222.8	2229.7
18°	2437.0	2359.4	2281.3	2228.8	2205.6	2212.5
18.5°	2425.4	2345.0	2264.6	2211.1	2187.4	2194.4
19°	2412.9	2330.1	2247.9	2193.5	2169.3	2176.3
19.5°	2400.3	2315.3	2230.7	2174.9	2150.7	2158.6
20°	2387.3	2299.0	2213.0	2156.8	2132.6	2140.5
20.5°	2373.8	2283.2	2195.3	2138.2	2114.0	2121.4
21°	2359.4	2266.5	2177.2	2119.1	2094.9	2102.8

TEST NUMBER: P776556

CATALOG NUMBER: HCDJBL54050CSD-HCD41TRH-HCD41TRLWW-5000lm-3000K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
22.5°	2316.2	2215.8	2120.5	2060.5	2036.4	2045.2
23°	2300.4	2197.2	2101.0	2040.6	2016.9	2026.1
23.5°	2284.6	2179.5	2081.0	2020.1	1996.9	2006.2
24°	2267.9	2160.5	2061.0	1999.7	1976.4	1986.2
24.5°	2251.6	2141.4	2040.6	1978.7	1956.0	1966.2
25°	2233.9	2121.4	2019.6	1957.8	1935.0	1946.2
25.5°	2216.7	2102.4	1999.2	1936.9	1914.6	1925.7
26°	2198.1	2082.9	1977.3	1915.5	1893.7	1905.8
26.5°	2180.0	2062.9	1956.9	1893.7	1872.3	1884.8
27°	2161.4	2041.5	1934.6	1872.3	1851.4	1864.4
27.5°	2142.4	2021.0	1913.2	1850.4	1830.0	1843.5
28°	2122.8	1999.7	1890.4	1828.1	1808.1	1822.6
28.5°	2103.8	1978.7	1869.0	1806.3	1786.3	1801.6
29°	2083.3	1957.4	1846.3	1784.0	1764.9	1780.3
29.5°	2062.9	1935.5	1824.4	1761.7	1743.1	1758.9
30°	2042.9	1913.2	1801.2	1739.4	1721.2	1738.0
30.5°	2022.4	1890.9	1778.4	1716.6	1698.9	1716.1
31°	2001.0	1868.6	1755.2	1693.8	1677.1	1694.3
31.5°	1979.2	1845.8	1732.4	1671.0	1654.8	1672.9
32°	1957.4	1822.6	1709.1	1647.8	1632.4	1651.5
32.5°	1935.0	1799.8	1685.4	1625.9	1609.7	1629.7
33°	1912.7	1776.5	1662.2	1602.2	1587.8	1607.8
33.5°	1889.5	1753.3	1639.0	1579.5	1565.0	1586.0
34°	1866.3	1729.1	1615.7	1555.8	1542.7	1564.1
34.5°	1843.0	1705.0	1592.0	1532.5	1520.4	1541.8
35°	1819.3	1680.8	1567.4	1509.7	1497.6	1519.5
35.5°	1794.7	1657.1	1543.7	1486.5	1475.3	1497.6
36°	1770.0	1632.9	1520.4	1463.3	1452.6	1475.3
36.5°	1745.4	1607.8	1496.7	1440.5	1430.3	1453.5
37°	1719.8	1582.7	1472.5	1416.8	1407.9	1430.7
37.5°	1694.3	1558.1	1448.4	1393.5	1385.2	1408.9
38°	1667.8	1533.0	1424.2	1370.3	1362.4	1386.1
38.5°	1643.1	1507.9	1400.5	1347.5	1340.1	1364.7
39°	1616.2	1482.8	1376.8	1324.3	1317.8	1342.4
39.5°	1589.2	1457.2	1352.6	1302.0	1295.5	1319.6
40°	1562.7	1431.6	1328.5	1278.3	1272.2	1296.8
40.5°	1535.8	1406.1	1304.3	1255.5	1250.4	1275.5
41°	1508.8	1381.0	1280.6	1232.2	1228.1	1252.2
41.5°	1481.8	1355.4	1256.4	1209.9	1205.7	1230.4
42°	1454.9	1330.3	1232.7	1187.6	1183.0	1208.1
42.5°	1427.9	1305.2	1209.0	1164.4	1161.6	1186.2
43°	1399.6	1279.6	1185.8	1142.1	1139.7	1163.9
43.5°	1372.1	1254.1	1161.6	1119.3	1117.0	1142.1



TEST NUMBER: P776556

CATALOG NUMBER: HCDJBL54050CSD-HCD41TRH-HCD41TRLWW-5000lm-3000K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
45°	1289.4	1178.3	1091.9	1052.8	1051.4	1075.1
45.5°	1262.5	1154.1	1069.1	1030.5	1029.6	1054.2
46°	1234.1	1129.5	1046.3	1009.1	1008.2	1031.9
46.5°	1207.1	1104.4	1023.5	987.3	986.3	1010.1
47°	1179.2	1079.8	1000.3	965.9	965.4	988.2
47.5°	1151.8	1055.1	977.5	944.0	944.0	966.8
48°	1124.4	1031.0	955.2	922.2	922.7	945.0
48.5°	1097.4	1006.3	932.4	901.3	901.3	923.6
49°	1070.9	982.6	911.0	880.4	880.4	902.2
49.5°	1044.0	958.9	888.7	858.5	859.9	881.3
50°	1016.6	934.8	866.4	837.6	839.5	859.5
50.5°	990.1	911.0	844.6	817.2	818.1	838.5
51°	965.0	887.3	823.7	796.7	797.6	817.6
51.5°	938.5	864.1	802.7	775.3	777.6	796.7
52°	912.9	841.3	781.4	756.3	757.7	776.2
52.5°	887.3	818.5	760.4	735.8	737.7	755.8
53°	862.7	795.3	740.5	715.8	717.7	734.9
53.5°	837.6	773.5	720.0	695.8	697.7	713.5
54°	814.4	750.7	700.0	676.8	678.2	693.5
54.5°	790.2	729.3	680.5	657.7	659.1	673.1
55°	766.5	707.5	661.0	638.7	640.1	653.1
55.5°	742.8	687.0	641.9	620.1	621.0	633.1
56°	720.5	665.6	622.9	601.9	601.9	613.1
56.5°	698.2	646.1	604.7	583.8	583.3	593.1
57°	676.3	625.2	586.1	565.7	564.8	573.6
57.5°	654.9	605.7	568.0	548.0	546.2	554.5
58°	633.5	586.1	550.3	530.8	529.0	535.0
58.5°	612.6	567.5	532.7	513.6	510.4	516.4
59°	592.2	548.5	515.9	497.4	493.2	497.8
59.5°	572.2	530.8	498.8	480.6	475.5	479.2
60°	552.7	512.2	482.0	464.8	458.8	461.6
60.5°	533.1	495.0	465.7	448.1	441.6	443.4
61°	515.0	477.8	449.5	432.7	425.3	425.8
61.5°	496.4	461.1	434.1	417.4	409.0	408.6
62°	478.8	444.8	418.3	402.5	393.7	391.8
62.5°	461.1	428.6	402.5	387.2	377.9	374.6
63°	443.9	412.8	387.7	372.3	363.0	358.8
63.5°	427.6	397.9	372.8	357.9	348.1	343.0
64°	411.4	382.1	358.4	343.5	333.7	327.7
64.5°	396.0	368.1	344.0	329.6	319.8	311.9
65°	381.2	353.7	330.5	315.6	306.3	297.5
65.5°	365.8	339.8	316.5	302.1	292.8	282.6
66°	350.5	325.8	303.1	288.7	279.8	268.2



TEST NUMBER: P776556

CATALOG NUMBER: HCDJBL54050CSD-HCD41TRH-HCD41TRLWW-5000lm-3000K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
67.5°	309.1	287.3	265.4	251.0	241.2	229.2
68°	295.6	274.7	253.8	239.4	228.7	217.5
68.5°	283.1	262.6	242.2	228.2	216.6	206.8
69°	270.5	251.0	231.0	217.5	205.0	196.6
69.5°	258.4	239.4	220.3	206.8	193.8	187.8
70°	246.8	228.7	210.1	197.1	183.6	182.2
70.5°	235.7	218.0	199.9	188.3	174.8	179.0
71°	224.0	207.8	190.1	179.4	167.8	175.7
71.5°	213.4	197.5	181.3	171.1	164.5	172.4
72°	203.1	187.8	172.4	164.5	160.8	169.2
72.5°	193.4	178.5	166.9	158.0	157.6	165.0
73°	183.1	169.7	159.0	151.5	153.9	160.8
73.5°	173.8	161.8	151.1	145.5	150.1	157.1
74°	165.0	153.9	143.2	139.0	145.5	152.9
74.5°	156.2	146.0	135.3	134.3	141.3	149.2
75°	147.3	138.1	128.8	129.7	136.7	144.6
75.5°	139.4	129.7	122.7	125.5	131.5	139.9
76°	131.1	122.7	116.7	121.3	126.4	134.8
76.5°	123.2	115.7	110.6	117.1	121.3	129.2
77°	115.7	108.8	105.5	112.5	115.7	124.1
77.5°	108.3	102.3	99.9	107.4	110.6	118.5
78°	100.9	95.8	94.8	102.7	105.0	113.0
78.5°	93.4	89.2	89.2	97.6	99.0	106.9
79°	86.5	83.2	84.1	92.5	93.0	100.9
79.5°	79.5	76.7	79.5	87.4	86.9	94.8
80°	73.0	71.1	74.8	81.8	80.4	88.8
80.5°	66.5	65.5	70.2	76.7	74.4	82.3
81°	60.0	60.0	65.5	71.1	68.3	75.8
81.5°	53.9	54.8	60.9	65.5	61.8	69.3
82°	48.3	49.3	55.8	60.4	55.8	62.8
82.5°	42.8	44.2	50.7	54.8	49.7	56.2
83°	36.7	39.5	45.1	49.7	43.7	48.8
83.5°	31.1	34.4	40.0	44.6	38.1	41.8
84°	25.6	29.3	34.4	39.5	33.0	34.9
84.5°	20.0	24.2	28.8	34.4	28.4	28.4
85°	14.9	19.1	23.2	28.8	24.6	22.3
85.5°	10.2	14.4	17.2	23.2	20.9	18.1
86°	6.0	9.8	13.0	17.7	17.2	15.8
86.5°	2.3	5.1	8.8	13.5	13.9	13.0
87°	0.0	0.9	4.6	9.3	10.7	10.7
87.5°	0.0	0.0	0.5	4.6	7.0	8.4
88°	0.0	0.0	0.0	0.5	3.7	6.0
88.5°	0.0	0.0	0.0	0.5	0.9	3.7



TEST NUMBER: P776556

CATALOG NUMBER: HCDJBL54050CSD-HCD41TRH-HCD41TRLWW-5000lm-3000K

CANDELA DISTRIBUTION (continued):

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



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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°	2083.8	2143.7	2213.5	2302.7	2400.3	2490.5	2552.8	2579.7	2571.4	2519.8	2445.9
22°	2064.7	2125.6	2196.7	2287.4	2386.4	2479.3	2543.0	2570.9	2562.1	2509.6	2433.8



44°	1119.3	1190.9	1258.7	1353.6	1469.8	1609.2	1724.9	1783.0	1759.8	1634.8	1495.8
44.5°	1097.9	1168.6	1236.0	1329.8	1444.7	1581.8	1696.1	1753.3	1729.1	1604.1	1466.0



66.5°	254.7	312.8	364.4	411.8	448.1	483.4	507.1	510.4	483.4	431.4	383.0
67°	241.7	298.4	349.5	397.0	431.8	465.7	488.1	490.8	463.4	414.2	367.2



89°	1.4	12.1	24.6	29.3	24.6	19.5	11.2	2.8	0.5	0.0	0.0
89.5°	0.5	8.8	19.1	23.7	19.1	14.4	7.0	1.4	0.0	0.0	0.0

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21.5°	2345.0	2250.2	2158.6	2100.1	2075.4	2083.8
22°	2331.1	2233.0	2139.1	2080.5	2056.4	2064.7



44°	1344.3	1229.0	1138.8	1097.4	1095.1	1119.3
44.5°	1317.8	1203.9	1115.1	1074.7	1073.3	1097.9



66.5°	336.5	312.4	290.5	276.1	266.3	254.7
67°	322.6	299.3	277.5	263.6	253.8	241.7

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Scaled Data Report



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

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Scaled Data Report



(END OF REPORT)