

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: P776565

Luminaire Tested: HCDJBS4050CSD-HCD41TRMW-5000lm-2700K

Issue Date: 2/13/2024

Test Information

Test Method: LM-79-2019
Report Number: P776565
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (A2312156B030)
Test Lab:
Issue Date: 2/13/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: HALO COMMERCIAL
Catalog Number: HCDJBS4050CSD-HCD41TRMW-5000lm-2700K
Description: 4 INCH ROUND SHALLOW-WIDE MATTE WHITE TRIM
Light Source: SELECTABLE LUMENS AND CCT ARRAY 90CRI / 2700K CCT
Ballast/Driver: -

Summary

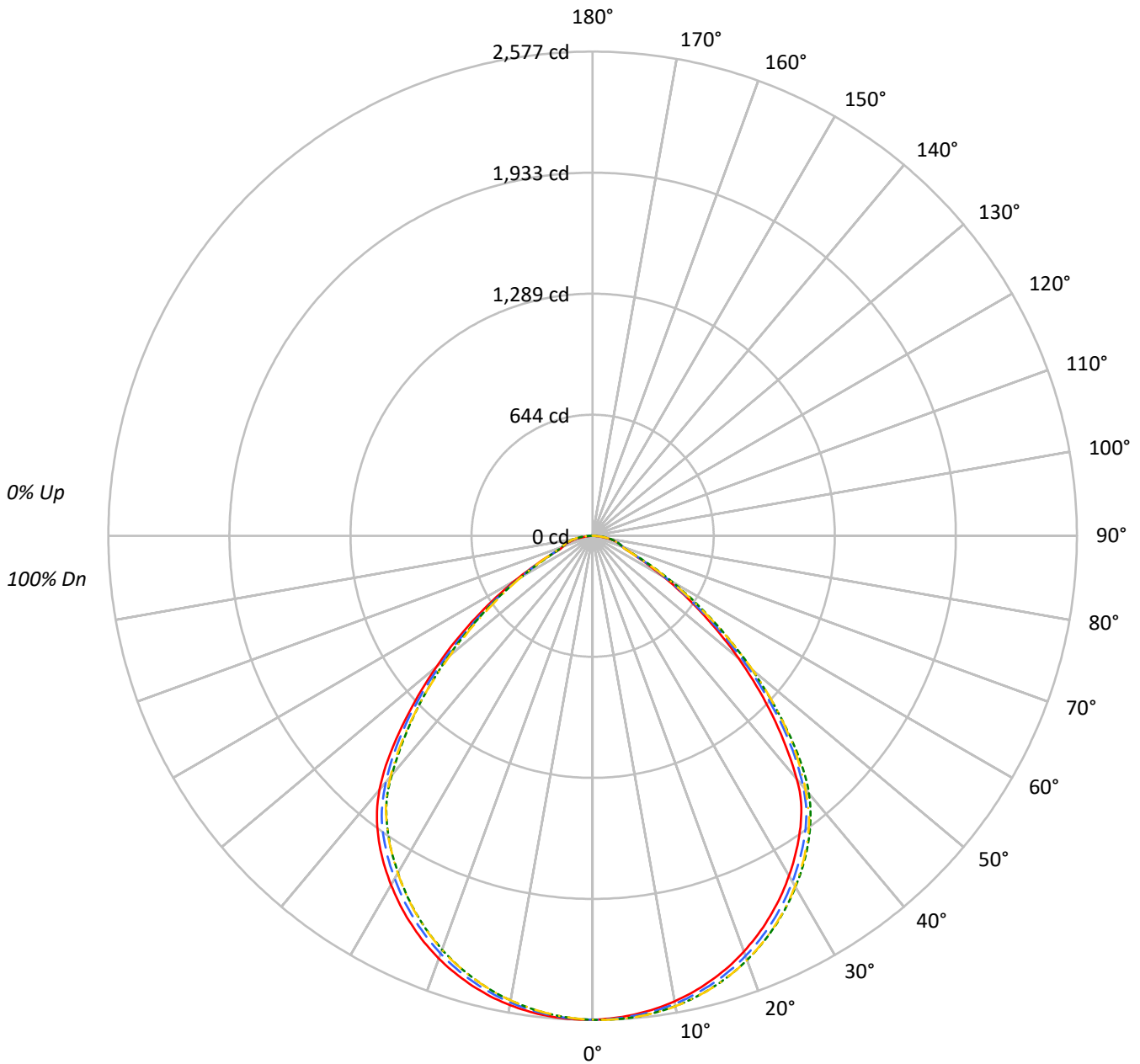
Lumens per Lamp: N/A
Luminaire Lumens: 5377.5 lumens
Efficiency: N/A
Efficacy: 112.0 lumens/watt
Spacing Criteria (0/90/45): 1.22 / 1.22 / 1.28
Luminous Opening: Circular (Dia: 0.33' x H: 0')
CIE Type: Direct

Input Watts (W): 48
Input Voltage (V): NR
Input Current (A_{in}): 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: P776565
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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	100	100	100	100	100		
	1	111	107	103	100	108	105	102	99	101	98	96	97	95	93	93	92	90	88	88	88	88	88	88		
	2	103	96	90	85	100	94	89	84	90	86	82	87	84	81	84	81	79	77	77	77	77	77	77		
	3	95	86	79	73	93	84	78	73	82	76	72	79	74	70	76	73	69	67	67	67	67	67	67		
	4	88	77	70	64	86	76	69	64	74	68	63	72	66	62	69	65	61	59	59	59	59	59	59		
	5	81	70	62	56	79	69	62	56	67	60	55	65	59	55	63	58	54	52	52	52	52	52	52		
	6	76	64	56	50	74	63	55	50	61	54	49	60	54	49	58	53	49	47	47	47	47	47	47		
	7	71	58	50	45	69	57	50	45	56	49	44	55	49	44	53	48	44	42	42	42	42	42	42		
	8	66	54	46	40	64	53	45	40	52	45	40	50	44	40	49	44	40	38	38	38	38	38	38		
	9	62	49	42	37	60	49	42	37	48	41	36	47	41	36	46	40	36	34	34	34	34	34	34		
	10	58	46	38	33	57	45	38	33	44	38	33	43	37	33	43	37	33	31	31	31	31	31	31		

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°	270°
0°	324101	324101	324101	324101
5°	323153	324872	324467	322913
10°	321472	324794	324091	320884
15°	319026	323834	322948	317958
20°	315357	321826	320607	313830
25°	310255	318558	316906	308172
30°	303702	313700	311782	301115
35°	295300	307130	304611	292366
40°	277593	294202	289947	273026
45°	240929	260899	255292	237779
50°	198372	216854	212488	196688
55°	153216	169518	166205	153216
60°	109338	121722	119205	109791
65°	74238	79539	77514	74387
70°	61891	61560	62038	63216
75°	65157	65595	62920	68707
80°	60806	67691	55153	72691
85°	33500	61802	23681	70465

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 112.5°
 Vertical Angle: 45°
 Luminance: 265028 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	243.5	4.5
10°-20°	694.6	12.9
20°-30°	1039.0	19.3
30°-40°	1214.9	22.6
40°-50°	1074.5	20.0
50°-60°	653.9	12.2
60°-70°	272.5	5.1
70°-80°	141.4	2.6
80°-90°	43.3	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°	1977.1	36.8
0°-40°	3192.0	59.4
0°-60°	4920.4	91.5
0°-90°	5377.5	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	5377.5	100.0

CANDELA DISTRIBUTION:

	0°	90°	180°	270°	360°	Flux
0°	2575	2575	2575	2575	2575	
5°	2558	2572	2568	2556	2558	243
15°	2449	2486	2479	2440	2449	690
25°	2234	2294	2282	2219	2234	1029
35°	1922	1999	1983	1903	1922	1197
45°	1354	1466	1434	1336	1354	1040
55°	698	773	758	698	698	629
65°	249	267	260	250	249	263
75°	134	135	129	141	134	138
85°	23	43	16	49	23	34
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°	2575.3	2575.3	2575.3	2575.3	2575.3	2575.3	2575.3	2575.3	2575.3	2575.3	2575.3
0.5°	2574.8	2575.3	2575.7	2574.8	2576.6	2577.1	2576.2	2575.7	2575.7	2575.7	2575.3
1°	2573.9	2574.8	2575.3	2575.3	2577.1	2577.6	2577.1	2576.2	2575.7	2575.7	2574.8
1.5°	2572.5	2573.9	2574.8	2575.3	2577.1	2578.0	2577.1	2576.2	2575.7	2575.3	2573.9
2°	2571.2	2572.5	2574.4	2574.8	2577.1	2578.0	2577.1	2576.2	2575.3	2574.4	2573.0
2.5°	2569.4	2571.2	2573.5	2574.4	2576.6	2578.0	2577.1	2575.7	2574.8	2573.5	2571.6
3°	2567.5	2569.8	2572.1	2573.5	2576.2	2577.6	2576.2	2575.3	2573.9	2572.5	2570.3
3.5°	2565.7	2568.0	2570.7	2572.5	2575.3	2577.1	2575.7	2574.4	2573.0	2570.7	2568.4
4°	2563.4	2565.7	2568.9	2571.2	2574.4	2576.2	2574.4	2573.0	2571.6	2569.4	2566.2
4.5°	2560.7	2563.4	2566.6	2569.4	2573.0	2574.8	2573.5	2571.6	2569.8	2567.5	2563.9
5°	2558.0	2561.2	2564.3	2567.5	2571.6	2573.5	2571.6	2570.3	2568.4	2565.3	2561.2
5.5°	2554.8	2558.0	2562.1	2565.7	2569.4	2572.1	2569.8	2568.0	2566.2	2562.5	2558.4
6°	2551.1	2555.2	2559.3	2563.4	2567.5	2569.8	2568.0	2566.2	2563.9	2560.2	2555.2
6.5°	2547.5	2551.6	2556.6	2560.7	2565.3	2568.0	2565.7	2563.9	2561.6	2557.5	2552.0
7°	2543.8	2547.9	2553.4	2558.0	2562.5	2565.3	2563.0	2561.2	2558.4	2554.3	2548.8
7.5°	2539.7	2544.3	2549.8	2554.8	2559.8	2563.0	2560.2	2558.4	2555.2	2550.7	2544.7
8°	2535.6	2540.2	2546.6	2551.6	2556.1	2559.8	2557.0	2555.2	2552.0	2547.0	2540.6
8.5°	2531.1	2536.1	2542.0	2547.9	2552.9	2557.0	2553.9	2551.6	2548.4	2543.4	2536.5
9°	2526.1	2531.5	2537.9	2544.3	2549.3	2553.4	2550.2	2547.9	2544.7	2538.8	2532.0
9.5°	2521.0	2526.5	2533.8	2539.7	2545.7	2549.8	2546.6	2544.3	2540.6	2534.7	2527.0
10°	2515.6	2521.5	2528.8	2535.6	2541.6	2545.7	2542.5	2540.2	2536.1	2530.2	2522.0
10.5°	2510.1	2516.5	2523.8	2530.6	2537.0	2541.6	2537.9	2535.6	2531.5	2525.1	2516.9
11°	2504.2	2510.6	2518.8	2526.1	2532.4	2537.0	2533.3	2530.6	2527.0	2519.7	2511.0
11.5°	2498.3	2505.1	2513.3	2521.0	2527.4	2532.4	2528.3	2526.1	2521.5	2514.2	2505.1
12°	2491.9	2498.7	2507.4	2515.1	2522.4	2527.4	2523.3	2521.0	2516.5	2508.7	2499.2
12.5°	2485.0	2492.3	2501.4	2509.6	2516.9	2522.4	2517.8	2515.1	2511.0	2502.8	2492.8
13°	2478.7	2485.9	2495.1	2503.7	2511.0	2516.9	2511.9	2509.6	2505.1	2496.4	2486.4
13.5°	2470.9	2479.1	2488.2	2497.8	2505.1	2511.0	2506.0	2503.7	2498.7	2490.0	2479.6
14°	2464.1	2472.3	2481.8	2491.4	2498.7	2505.1	2500.1	2497.3	2492.3	2483.2	2472.3
14.5°	2456.3	2465.0	2474.5	2484.6	2492.3	2498.7	2493.2	2490.5	2485.5	2476.4	2465.0
15°	2448.6	2457.2	2467.7	2477.7	2485.5	2492.3	2486.9	2484.1	2478.7	2469.1	2457.2
15.5°	2440.4	2449.0	2460.0	2470.0	2478.7	2485.0	2479.6	2476.8	2471.4	2461.8	2449.5
16°	2431.7	2440.8	2451.8	2462.7	2471.4	2478.2	2471.8	2469.5	2463.6	2453.6	2441.3
16.5°	2423.0	2432.6	2444.0	2454.9	2463.6	2470.4	2464.5	2461.8	2456.3	2445.8	2432.6
17°	2414.4	2424.0	2435.8	2446.7	2455.9	2462.7	2456.8	2453.6	2447.7	2437.6	2424.0
17.5°	2405.3	2414.8	2427.1	2439.0	2447.7	2454.9	2448.1	2445.4	2439.5	2428.5	2414.8
18°	2395.7	2405.7	2418.0	2430.3	2439.5	2446.3	2439.9	2437.2	2431.2	2419.9	2405.7
18.5°	2385.7	2396.2	2408.9	2421.2	2430.8	2437.6	2431.2	2428.5	2422.1	2410.7	2396.2
19°	2375.6	2386.6	2399.3	2412.1	2421.7	2429.0	2422.1	2419.4	2413.5	2401.6	2386.6
19.5°	2365.2	2376.6	2389.8	2403.0	2412.6	2419.9	2412.6	2410.3	2403.9	2391.6	2376.6
20°	2354.7	2366.1	2379.7	2393.4	2403.0	2410.7	2403.0	2400.3	2393.9	2382.0	2366.1
20.5°	2344.2	2355.6	2369.7	2383.4	2393.4	2400.7	2393.0	2390.2	2383.8	2371.5	2355.1
21°	2332.3	2344.6	2358.8	2373.4	2383.4	2391.1	2382.9	2380.2	2373.8	2361.1	2344.6

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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°	2297.7	2310.5	2326.0	2341.0	2351.9	2359.7	2350.6	2348.3	2341.5	2328.2	2310.5
23°	2285.4	2298.6	2314.1	2330.1	2341.0	2348.7	2339.2	2336.9	2330.1	2316.8	2298.2
23.5°	2273.1	2286.3	2302.3	2318.2	2329.6	2337.4	2327.8	2325.0	2318.7	2304.5	2286.3
24°	2260.3	2274.0	2290.4	2306.8	2317.8	2326.0	2315.9	2313.2	2306.8	2292.7	2274.0
24.5°	2247.6	2261.2	2278.1	2294.5	2305.9	2314.1	2304.1	2301.3	2294.5	2280.4	2261.2
25°	2234.3	2248.0	2265.3	2282.2	2294.1	2301.8	2291.3	2289.0	2282.2	2268.1	2248.5
25.5°	2221.1	2235.3	2252.6	2269.9	2281.7	2289.5	2279.0	2276.3	2269.9	2255.3	2235.3
26°	2207.0	2222.0	2239.4	2257.1	2269.0	2277.2	2266.2	2263.5	2257.1	2242.1	2221.6
26.5°	2193.8	2208.4	2226.1	2244.4	2255.8	2264.4	2253.0	2250.3	2243.5	2229.3	2208.4
27°	2179.6	2194.2	2212.5	2230.7	2243.0	2251.7	2239.4	2237.1	2230.2	2215.7	2194.7
27.5°	2165.1	2180.6	2199.2	2217.5	2229.3	2238.0	2226.1	2223.4	2217.0	2201.5	2180.6
28°	2150.5	2166.0	2184.7	2203.8	2215.7	2224.3	2212.0	2209.7	2202.9	2188.3	2166.0
28.5°	2135.4	2151.4	2170.5	2189.7	2202.4	2210.6	2197.9	2195.6	2188.8	2173.3	2151.4
29°	2120.8	2136.3	2155.9	2175.5	2187.8	2196.5	2183.3	2181.5	2174.6	2159.6	2136.8
29.5°	2105.3	2121.8	2141.4	2161.0	2173.7	2182.4	2168.7	2166.9	2160.0	2144.5	2122.2
30°	2089.9	2106.7	2126.3	2146.4	2158.7	2167.8	2154.1	2151.8	2145.5	2130.0	2106.7
30.5°	2073.9	2091.2	2111.3	2131.8	2144.1	2152.8	2139.1	2136.8	2130.4	2114.5	2091.2
31°	2057.9	2075.3	2096.2	2116.3	2129.1	2138.2	2123.6	2121.3	2114.9	2099.4	2075.7
31.5°	2042.0	2059.8	2080.3	2101.2	2113.6	2122.7	2108.1	2105.8	2099.4	2083.9	2060.7
32°	2026.0	2043.8	2064.3	2085.7	2098.1	2107.2	2092.1	2090.3	2083.9	2068.9	2044.3
32.5°	2009.2	2027.4	2048.8	2069.8	2083.0	2091.7	2076.2	2074.4	2068.0	2052.9	2027.9
33°	1992.8	2011.0	2032.4	2053.8	2066.6	2075.7	2059.8	2057.9	2052.0	2036.5	2011.5
33.5°	1975.9	1994.1	2016.0	2037.9	2050.2	2059.3	2043.4	2041.1	2035.2	2019.7	1994.6
34°	1958.1	1977.3	1998.7	2021.0	2033.8	2042.9	2025.6	2023.8	2017.8	2002.3	1977.3
34.5°	1940.8	1959.5	1981.8	2003.7	2016.9	2025.1	2008.7	2006.4	2000.5	1985.5	1959.9
35°	1922.1	1941.7	1964.1	1986.4	1999.1	2007.8	1990.5	1988.7	1982.7	1967.7	1942.2
35.5°	1903.9	1923.5	1945.8	1968.6	1981.4	1990.0	1972.7	1970.4	1965.0	1949.5	1923.9
36°	1885.2	1904.8	1927.6	1950.4	1963.6	1972.3	1953.6	1950.8	1945.8	1930.3	1904.8
36.5°	1865.6	1885.7	1908.4	1932.1	1944.5	1953.1	1933.5	1931.2	1925.8	1910.7	1885.2
37°	1845.5	1865.6	1888.4	1911.6	1924.4	1933.1	1913.5	1911.2	1905.7	1890.7	1865.1
37.5°	1824.1	1845.1	1868.3	1892.0	1904.3	1913.0	1891.6	1890.2	1885.2	1869.7	1841.9
38°	1801.8	1823.2	1847.8	1871.1	1883.4	1892.5	1867.9	1867.4	1863.8	1847.4	1817.7
38.5°	1776.7	1798.1	1823.2	1849.6	1862.0	1870.2	1842.4	1841.9	1840.5	1824.6	1793.1
39°	1750.3	1770.8	1796.8	1825.9	1839.2	1846.5	1815.9	1816.4	1816.4	1800.0	1766.2
39.5°	1721.1	1743.0	1770.8	1801.8	1815.5	1821.4	1789.5	1789.5	1791.3	1774.0	1739.8
40°	1689.7	1713.4	1743.4	1774.9	1790.8	1794.5	1761.7	1760.8	1764.9	1746.6	1711.1
40.5°	1657.3	1681.9	1714.3	1748.0	1764.4	1766.7	1733.9	1732.5	1736.6	1717.9	1684.2
41°	1624.5	1650.5	1685.1	1718.8	1736.6	1738.4	1706.1	1704.2	1706.5	1688.7	1653.6
41.5°	1591.7	1618.6	1654.6	1689.2	1706.5	1709.7	1676.9	1674.2	1675.5	1658.7	1624.0
42°	1557.0	1585.3	1624.0	1658.7	1675.5	1680.1	1647.7	1645.0	1643.6	1627.7	1593.0
42.5°	1523.7	1552.0	1592.6	1627.7	1642.7	1649.5	1617.2	1614.0	1610.3	1595.3	1561.6
43°	1490.0	1519.2	1560.7	1595.3	1609.0	1618.1	1586.6	1582.5	1576.2	1562.5	1528.8
43.5°	1456.3	1485.9	1526.5	1562.5	1573.4	1587.1	1555.7	1550.6	1540.6	1528.8	1496.9



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CATALOG NUMBER: HCDJBL54050CSD-HCD41TRMW-5000lm-2700K

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
45°	1353.7	1386.1	1424.4	1458.6	1465.9	1489.1	1458.1	1451.7	1434.4	1423.0	1395.2
45.5°	1319.5	1352.4	1389.3	1422.6	1428.9	1454.0	1425.7	1417.5	1398.4	1386.5	1361.0
46°	1285.8	1318.6	1353.7	1385.6	1391.6	1419.8	1391.1	1382.0	1362.8	1350.1	1325.0
46.5°	1251.6	1284.4	1318.2	1348.7	1355.6	1384.7	1356.9	1347.4	1327.3	1313.6	1289.5
47°	1216.5	1250.7	1282.6	1311.3	1320.0	1348.7	1322.7	1312.7	1292.7	1277.2	1254.4
47.5°	1182.4	1216.1	1245.7	1274.4	1284.0	1312.7	1289.0	1276.7	1258.0	1241.6	1219.3
48°	1148.2	1181.0	1210.6	1237.0	1248.4	1276.7	1253.5	1241.1	1222.9	1204.7	1182.8
48.5°	1114.0	1146.8	1174.1	1199.7	1213.3	1240.7	1219.3	1205.1	1188.3	1169.1	1148.2
49°	1080.3	1112.2	1138.6	1163.2	1177.8	1205.1	1182.8	1170.0	1154.1	1133.1	1112.2
49.5°	1046.5	1076.6	1103.0	1126.3	1142.2	1168.7	1146.8	1134.5	1119.4	1098.0	1077.1
50°	1013.2	1042.4	1067.0	1089.8	1107.6	1133.1	1111.7	1098.9	1085.3	1062.5	1042.0
50.5°	980.0	1007.3	1031.5	1053.4	1073.0	1097.6	1074.8	1064.3	1050.6	1028.3	1006.9
51°	946.7	973.1	996.4	1017.8	1037.9	1061.6	1040.1	1030.1	1017.3	994.6	972.7
51.5°	914.8	939.9	961.7	982.3	1003.7	1027.8	1003.7	995.5	984.1	960.4	939.0
52°	882.4	906.1	927.1	948.1	969.9	992.7	967.2	960.8	951.7	926.2	905.2
52.5°	851.0	872.9	892.9	913.9	935.8	957.6	932.6	927.1	918.0	893.4	871.0
53°	819.5	840.0	858.3	880.2	902.5	923.0	897.5	893.8	884.7	860.1	838.2
53.5°	788.5	807.7	825.0	846.9	868.8	889.7	863.3	860.1	851.9	828.6	805.9
54°	758.0	775.8	791.3	814.5	836.9	856.0	827.7	827.3	821.4	796.3	774.9
54.5°	727.9	743.4	759.4	782.2	804.9	823.2	794.5	795.4	789.4	765.3	743.9
55°	698.3	712.9	727.9	751.2	772.6	791.3	761.2	763.5	757.5	734.3	712.4
55.5°	669.6	682.8	696.0	720.2	741.1	758.9	728.4	732.0	726.5	704.7	682.3
56°	641.3	653.2	665.0	690.5	710.1	726.1	696.5	700.1	697.4	674.6	653.6
56.5°	613.1	623.5	635.8	660.9	680.1	695.1	665.0	670.0	666.8	645.9	624.9
57°	585.7	595.3	606.7	632.2	650.0	665.0	634.5	639.9	637.2	618.1	597.1
57.5°	558.8	567.0	578.0	603.5	620.8	634.5	604.8	610.8	608.5	590.7	569.3
58°	532.4	539.7	549.7	576.6	591.6	604.4	576.1	582.1	581.1	563.8	543.3
58.5°	506.9	513.2	523.3	549.2	564.7	575.7	547.9	552.9	552.9	537.8	517.8
59°	482.2	487.7	498.2	524.2	536.5	547.4	520.5	525.1	525.5	512.3	492.3
59.5°	458.1	462.6	473.1	497.7	509.6	519.6	493.6	498.6	499.1	487.3	468.6
60°	434.4	438.5	449.4	473.1	483.6	492.3	467.7	472.2	473.6	463.1	445.3
60.5°	412.0	415.2	426.2	449.0	458.5	466.3	443.5	446.2	448.5	439.8	422.5
61°	389.7	392.9	403.8	425.7	433.9	441.7	421.2	422.1	424.4	418.4	402.5
61.5°	368.7	371.9	382.9	402.5	411.6	418.9	398.4	399.7	402.0	397.0	382.9
62°	348.7	351.9	362.4	381.1	389.3	395.6	376.0	376.9	379.7	375.6	362.8
62.5°	329.5	332.3	342.8	359.6	367.4	372.8	353.7	354.2	357.3	354.2	342.8
63°	311.3	313.6	324.1	339.1	345.0	349.6	331.4	331.8	335.5	332.7	322.7
63.5°	294.4	296.3	306.3	319.5	322.7	326.8	310.9	311.8	315.9	313.6	304.9
64°	278.0	280.3	289.4	300.4	303.6	306.8	292.2	292.2	296.7	295.8	288.1
64.5°	262.5	264.8	273.5	283.1	284.9	288.1	274.8	274.8	278.5	278.5	272.6
65°	249.3	250.7	258.4	266.6	267.1	270.3	258.0	258.4	260.3	262.5	258.0
65.5°	236.6	237.9	244.8	251.1	250.7	253.4	242.5	242.9	242.9	248.0	244.3
66°	224.3	226.1	232.0	236.6	235.2	238.4	228.4	228.8	226.5	233.4	231.5



TEST NUMBER: P776565

CATALOG NUMBER: HCDJBL54050CSD-HCD41TRMW-5000lm-2700K

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
67.5°	194.6	196.9	199.6	201.0	198.3	201.5	193.7	195.5	190.5	199.2	200.6
68°	186.9	189.2	191.0	191.9	189.2	191.9	185.5	187.3	182.8	191.0	192.3
68.5°	179.6	182.8	183.7	183.7	181.4	183.7	179.1	180.5	178.2	183.7	185.1
69°	174.6	177.3	176.9	176.9	175.5	177.3	174.1	175.0	175.0	178.2	179.1
69.5°	171.4	172.3	171.8	171.4	170.5	171.8	170.5	171.4	171.8	173.7	175.0
70°	168.2	168.2	168.2	167.7	167.3	168.6	167.7	168.2	168.6	170.5	171.8
70.5°	165.0	165.5	166.4	165.0	164.5	165.9	165.0	165.0	165.5	167.3	169.1
71°	161.8	162.3	163.2	161.8	161.4	162.7	161.8	161.4	161.8	164.1	166.4
71.5°	159.1	159.1	160.4	159.1	158.6	160.0	158.6	158.2	158.6	160.4	163.2
72°	155.9	155.9	157.3	156.3	155.4	156.8	155.4	154.5	154.5	156.8	160.0
72.5°	153.1	153.1	154.1	153.6	152.2	153.6	152.2	150.9	150.9	153.1	156.8
73°	149.5	149.5	150.9	150.4	149.0	150.4	148.6	146.8	146.8	149.5	153.1
73.5°	145.9	145.9	147.7	146.8	145.9	146.8	144.9	142.7	142.7	145.4	149.5
74°	141.8	142.2	144.0	143.6	142.2	143.6	141.3	138.6	138.6	141.3	145.9
74.5°	137.7	138.1	140.4	140.4	138.6	139.9	137.7	134.5	134.0	137.2	142.2
75°	134.0	134.0	136.7	136.7	134.9	136.3	133.5	129.9	129.4	132.6	138.1
75.5°	129.4	129.9	133.1	133.1	131.3	132.6	129.4	125.3	124.9	128.1	134.0
76°	124.9	125.3	129.0	129.4	127.6	129.0	125.3	120.8	119.9	123.5	129.9
76.5°	120.8	121.2	124.9	125.3	123.5	124.9	120.8	116.2	115.3	118.5	125.8
77°	115.8	116.7	120.8	121.7	119.4	120.8	116.7	111.2	109.8	113.5	121.7
77.5°	110.8	111.7	116.7	117.6	115.3	116.7	112.1	106.2	104.4	108.0	116.7
78°	105.7	107.1	112.1	113.5	111.2	112.6	107.1	100.7	98.9	103.0	112.1
78.5°	100.7	102.1	107.6	109.4	106.7	108.0	102.6	95.3	93.4	97.5	107.1
79°	95.3	96.6	103.0	104.8	102.6	103.5	97.5	89.8	88.0	92.1	102.6
79.5°	89.8	91.6	98.5	100.3	98.0	99.4	92.5	84.3	82.0	86.1	97.5
80°	83.9	85.7	93.4	95.7	93.4	94.4	87.5	78.9	76.1	80.2	92.1
80.5°	78.4	80.2	88.4	91.2	88.4	89.8	82.5	72.9	70.2	74.8	87.1
81°	72.9	74.8	83.4	86.6	83.9	84.8	77.5	67.0	63.8	68.4	81.6
81.5°	66.5	68.8	78.4	81.6	78.9	79.8	72.0	61.1	57.9	62.4	76.1
82°	60.6	62.9	72.9	76.6	73.8	75.2	67.0	55.2	51.5	56.5	71.1
82.5°	54.7	57.0	67.9	71.6	68.8	69.7	62.0	49.7	45.6	50.1	65.6
83°	48.3	51.0	62.9	66.5	63.8	64.7	57.0	44.7	39.2	45.1	60.6
83.5°	41.9	45.1	57.9	61.5	58.8	59.7	52.0	39.7	33.3	40.1	55.2
84°	35.6	39.2	52.9	56.5	53.8	54.7	46.9	34.6	26.9	35.1	50.6
84.5°	29.2	33.7	47.9	51.0	48.3	49.2	41.9	30.1	20.5	29.6	45.6
85°	23.2	29.2	43.3	46.0	42.8	43.8	36.9	25.1	16.4	24.6	40.6
85.5°	17.8	25.5	38.3	40.6	37.4	38.3	31.5	21.4	14.1	21.9	36.0
86°	15.5	22.3	33.3	35.1	31.9	32.8	26.4	18.2	12.3	18.7	31.0
86.5°	13.2	18.7	27.8	29.6	26.4	27.3	21.4	15.0	10.0	16.0	26.0
87°	10.9	15.5	22.8	23.7	21.0	21.4	16.4	11.4	8.2	12.8	21.0
87.5°	8.2	12.3	17.3	18.2	15.5	16.0	10.9	8.2	5.9	10.0	16.0
88°	5.9	9.1	13.2	13.7	10.0	10.9	6.4	5.0	3.6	6.8	10.9
88.5°	4.1	5.9	9.1	9.1	5.5	5.9	2.3	2.3	2.3	4.1	6.4



TEST NUMBER: P776565
CATALOG NUMBER: HCDJBL4050CSD-HCD41TRMW-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	0.5	0.5	0.0	0.0	0.0	0.5	0.0	0.5	0.0



TEST NUMBER: P776565

CATALOG NUMBER: HCDJBL54050CSD-HCD41TRMW-5000lm-2700K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
0°	2575.3	2575.3	2575.3	2575.3	2575.3	2575.3
0.5°	2573.9	2575.3	2575.3	2574.8	2574.4	2574.8
1°	2573.0	2574.4	2573.5	2573.9	2573.5	2573.9
1.5°	2572.1	2573.0	2572.1	2572.1	2572.1	2572.5
2°	2570.3	2571.2	2570.3	2570.7	2570.3	2571.2
2.5°	2568.9	2569.4	2568.4	2568.9	2568.4	2569.4
3°	2567.1	2567.1	2565.7	2566.6	2566.2	2567.5
3.5°	2564.8	2564.8	2563.4	2564.3	2564.3	2565.7
4°	2562.5	2562.5	2560.2	2561.6	2561.6	2563.4
4.5°	2559.8	2559.3	2557.5	2558.9	2558.9	2560.7
5°	2556.6	2556.1	2554.3	2555.7	2555.7	2558.0
5.5°	2553.4	2552.9	2550.7	2552.0	2552.5	2554.8
6°	2550.2	2549.3	2546.6	2548.8	2548.8	2551.1
6.5°	2546.6	2545.7	2542.5	2544.7	2545.2	2547.5
7°	2542.9	2541.6	2538.4	2540.6	2541.1	2543.8
7.5°	2538.4	2537.0	2533.8	2536.1	2536.5	2539.7
8°	2534.3	2532.4	2528.8	2531.5	2532.4	2535.6
8.5°	2529.2	2527.0	2524.2	2527.0	2527.4	2531.1
9°	2524.7	2522.0	2518.8	2522.0	2522.9	2526.1
9.5°	2519.2	2516.5	2513.3	2516.5	2517.4	2521.0
10°	2513.7	2511.0	2507.4	2510.6	2511.9	2515.6
10.5°	2508.3	2505.1	2501.0	2505.1	2506.5	2510.1
11°	2501.9	2499.2	2494.6	2498.7	2500.5	2504.2
11.5°	2496.0	2492.8	2488.2	2492.3	2494.1	2498.3
12°	2489.6	2485.9	2481.4	2485.9	2487.3	2491.9
12.5°	2482.8	2478.7	2474.1	2479.1	2480.9	2485.0
13°	2475.9	2471.8	2466.8	2471.8	2473.6	2478.7
13.5°	2468.2	2464.1	2459.5	2464.5	2466.3	2470.9
14°	2460.9	2456.8	2451.8	2457.2	2458.6	2464.1
14.5°	2453.1	2448.6	2443.6	2449.0	2450.8	2456.3
15°	2444.9	2440.4	2434.9	2441.3	2443.1	2448.6
15.5°	2436.7	2432.2	2426.7	2432.6	2434.4	2440.4
16°	2428.1	2423.0	2417.6	2424.0	2425.8	2431.7
16.5°	2419.4	2414.4	2408.5	2414.8	2417.1	2423.0
17°	2410.3	2404.8	2398.9	2405.7	2408.0	2414.4
17.5°	2400.7	2395.2	2389.3	2396.2	2398.4	2405.3
18°	2391.1	2385.2	2378.8	2386.6	2388.9	2395.7
18.5°	2381.1	2375.2	2368.8	2376.6	2378.8	2385.7
19°	2371.1	2364.7	2358.3	2366.1	2368.3	2375.6
19.5°	2360.6	2354.2	2347.4	2355.6	2357.9	2365.2
20°	2350.1	2343.3	2336.4	2344.6	2347.4	2354.7
20.5°	2338.7	2331.9	2324.6	2333.3	2336.9	2344.2
21°	2327.3	2320.0	2312.7	2322.3	2325.5	2332.3



TEST NUMBER: P776565

CATALOG NUMBER: HCDJBL54050CSD-HCD41TRMW-5000lm-2700K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
22.5°	2292.2	2284.5	2276.3	2286.3	2289.9	2297.7
23°	2279.9	2272.2	2263.5	2274.0	2277.6	2285.4
23.5°	2267.6	2259.9	2250.7	2261.2	2264.9	2273.1
24°	2254.9	2246.2	2237.5	2248.0	2251.7	2260.3
24.5°	2241.6	2233.0	2224.3	2235.3	2238.9	2247.6
25°	2228.4	2219.3	2210.6	2221.6	2225.7	2234.3
25.5°	2214.7	2205.6	2196.1	2207.9	2212.0	2221.1
26°	2201.1	2191.5	2182.4	2194.2	2198.3	2207.0
26.5°	2186.9	2177.8	2168.2	2179.6	2184.2	2193.8
27°	2172.8	2163.2	2153.2	2165.5	2170.1	2179.6
27.5°	2158.7	2148.7	2138.6	2150.9	2155.5	2165.1
28°	2144.1	2133.2	2123.6	2135.9	2140.4	2150.5
28.5°	2129.1	2118.6	2108.1	2120.4	2125.9	2135.4
29°	2114.0	2103.5	2093.0	2104.9	2110.4	2120.8
29.5°	2098.5	2088.0	2076.6	2089.9	2094.9	2105.3
30°	2083.5	2072.1	2061.6	2073.9	2079.4	2089.9
30.5°	2067.5	2056.1	2045.2	2057.9	2063.4	2073.9
31°	2052.0	2040.2	2029.2	2042.4	2047.5	2057.9
31.5°	2036.1	2024.2	2011.9	2025.6	2031.1	2042.0
32°	2019.7	2007.4	1996.0	2009.2	2014.6	2026.0
32.5°	2003.2	1990.9	1979.1	1992.3	1998.2	2009.2
33°	1986.4	1974.1	1962.2	1975.4	1981.4	1992.8
33.5°	1969.5	1956.8	1944.5	1958.6	1964.5	1975.9
34°	1951.7	1939.4	1926.7	1940.8	1946.7	1958.1
34.5°	1934.0	1921.2	1908.9	1923.0	1929.0	1940.8
35°	1916.2	1903.0	1890.2	1904.3	1910.7	1922.1
35.5°	1897.5	1884.3	1871.1	1885.7	1892.0	1903.9
36°	1878.4	1865.1	1851.9	1867.4	1873.3	1885.2
36.5°	1858.8	1845.5	1832.3	1847.4	1853.3	1865.6
37°	1838.2	1825.0	1811.8	1827.3	1833.2	1845.5
37.5°	1815.0	1803.2	1789.9	1806.8	1812.7	1824.1
38°	1789.0	1779.0	1764.9	1785.4	1790.4	1801.8
38.5°	1762.6	1753.0	1737.5	1760.3	1764.0	1776.7
39°	1734.8	1724.8	1710.6	1732.5	1737.5	1750.3
39.5°	1706.1	1693.8	1681.5	1703.8	1709.3	1721.1
40°	1676.4	1661.9	1650.0	1673.7	1679.6	1689.7
40.5°	1646.4	1629.9	1618.6	1642.7	1647.7	1657.3
41°	1615.4	1597.6	1585.7	1611.3	1615.8	1624.5
41.5°	1583.5	1564.3	1552.5	1579.8	1582.5	1591.7
42°	1551.1	1532.4	1519.2	1547.0	1548.8	1557.0
42.5°	1518.7	1500.5	1484.5	1514.2	1514.6	1523.7
43°	1485.9	1468.1	1450.4	1480.9	1480.9	1490.0
43.5°	1453.6	1434.9	1415.3	1446.7	1445.8	1456.3

TEST NUMBER: P776565

CATALOG NUMBER: HCDJBL54050CSD-HCD41TRMW-5000lm-2700K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
45°	1355.1	1336.0	1312.7	1341.9	1340.5	1353.7
45.5°	1322.3	1302.7	1278.5	1306.3	1305.0	1319.5
46°	1289.5	1270.3	1244.8	1270.8	1269.9	1285.8
46.5°	1256.6	1236.1	1210.6	1236.1	1234.8	1251.6
47°	1222.5	1202.4	1177.3	1199.7	1199.7	1216.5
47.5°	1189.6	1169.1	1143.2	1164.1	1165.0	1182.4
48°	1156.4	1135.9	1109.9	1127.7	1130.8	1148.2
48.5°	1122.6	1102.1	1075.7	1093.5	1096.7	1114.0
49°	1088.5	1069.8	1043.8	1057.5	1062.9	1080.3
49.5°	1054.7	1037.4	1011.4	1023.3	1029.2	1046.5
50°	1021.0	1004.6	978.2	988.2	995.9	1013.2
50.5°	987.7	972.2	945.8	954.9	962.7	980.0
51°	954.9	941.2	913.9	921.2	929.4	946.7
51.5°	921.6	909.3	882.4	888.8	896.6	914.8
52°	888.8	878.3	851.0	856.5	864.7	882.4
52.5°	856.5	847.3	819.5	825.9	833.2	851.0
53°	824.5	816.8	789.0	794.5	802.2	819.5
53.5°	793.1	786.7	759.4	763.9	771.2	788.5
54°	761.6	756.2	729.3	734.8	740.7	758.0
54.5°	731.1	727.0	700.6	706.0	711.1	727.9
55°	701.0	698.3	672.3	677.3	682.8	698.3
55.5°	671.4	669.6	644.5	650.4	654.5	669.6
56°	642.2	640.9	616.7	623.5	626.3	641.3
56.5°	614.0	613.5	590.3	597.6	599.4	613.1
57°	585.7	586.2	564.3	572.0	573.4	585.7
57.5°	558.4	559.7	538.8	547.0	547.9	558.8
58°	532.4	533.7	514.6	523.7	522.8	532.4
58.5°	506.4	508.7	490.9	500.5	499.6	506.9
59°	481.3	483.6	467.7	477.7	475.9	482.2
59.5°	456.7	459.4	445.8	455.8	454.0	458.1
60°	433.5	436.2	423.9	435.3	432.1	434.4
60.5°	413.0	413.4	402.9	414.8	411.6	412.0
61°	392.0	391.5	382.9	395.2	391.1	389.7
61.5°	371.0	370.6	364.2	376.0	371.9	368.7
62°	350.5	350.1	346.0	358.3	353.2	348.7
62.5°	329.5	330.9	328.2	340.9	335.5	329.5
63°	311.8	312.7	311.3	324.1	318.1	311.3
63.5°	295.4	294.9	295.4	308.1	302.2	294.4
64°	279.0	278.5	280.3	292.6	286.7	278.0
64.5°	263.9	263.5	266.2	278.0	272.1	262.5
65°	250.2	249.8	252.5	263.9	257.5	249.3
65.5°	237.5	237.5	239.8	251.1	245.7	236.6
66°	225.6	226.1	228.4	238.8	233.4	224.3

TEST NUMBER: P776565

CATALOG NUMBER: HCDJBL54050CSD-HCD41TRMW-5000lm-2700K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
67.5°	197.8	199.6	199.2	206.9	202.8	194.6
68°	191.0	192.3	191.9	198.3	194.2	186.9
68.5°	184.6	186.0	185.1	190.5	186.9	179.6
69°	179.1	180.5	179.1	183.2	180.5	174.6
69.5°	174.6	175.5	174.1	177.3	175.0	171.4
70°	171.8	171.8	170.5	172.7	170.9	168.2
70.5°	169.1	169.1	167.7	169.6	167.3	165.0
71°	165.9	165.9	165.0	166.8	164.1	161.8
71.5°	163.2	163.2	162.3	163.6	161.4	159.1
72°	160.0	160.0	159.1	160.9	158.2	155.9
72.5°	156.8	157.3	155.9	157.7	155.0	153.1
73°	153.6	154.5	153.1	155.0	151.8	149.5
73.5°	150.4	151.3	150.0	152.2	148.1	145.9
74°	147.2	148.1	147.2	148.6	144.5	141.8
74.5°	143.6	144.9	143.6	144.9	140.4	137.7
75°	139.9	141.3	139.9	141.8	136.7	134.0
75.5°	136.3	137.7	136.3	137.7	132.2	129.4
76°	132.6	134.0	132.6	134.0	128.1	124.9
76.5°	128.5	129.9	129.0	129.9	123.5	120.8
77°	124.4	126.3	124.9	125.8	119.0	115.8
77.5°	120.3	122.2	121.2	121.7	114.4	110.8
78°	116.2	118.1	117.1	117.6	109.4	105.7
78.5°	111.7	114.0	112.6	113.0	104.4	100.7
79°	107.1	109.4	108.5	108.5	99.4	95.3
79.5°	102.6	104.8	103.9	103.5	93.9	89.8
80°	98.0	100.3	98.9	98.9	88.4	83.9
80.5°	93.0	95.3	94.4	93.9	83.0	78.4
81°	88.4	90.7	89.8	88.9	77.5	72.9
81.5°	83.4	85.7	84.8	83.9	71.6	66.5
82°	77.9	80.7	79.8	78.4	65.6	60.6
82.5°	72.9	75.7	74.8	73.4	59.7	54.7
83°	67.9	70.2	69.3	68.4	54.2	48.3
83.5°	62.4	65.2	64.3	63.4	48.3	41.9
84°	57.0	59.7	59.3	57.9	42.4	35.6
84.5°	51.5	54.2	53.8	52.9	36.9	29.2
85°	46.0	48.8	48.3	48.3	31.9	23.2
85.5°	40.6	43.3	42.8	43.3	27.8	17.8
86°	34.6	37.8	37.4	38.3	24.2	15.5
86.5°	29.2	31.9	31.5	33.3	21.0	13.2
87°	23.7	26.4	26.0	27.8	17.3	10.9
87.5°	17.8	20.5	20.1	22.8	14.1	8.2
88°	12.3	15.0	14.6	17.3	10.9	5.9
88.5°	7.3	11.4	10.9	13.2	7.7	4.1



TEST NUMBER: P776565

CATALOG NUMBER: HCDJBL54050CSD-HCD41TRMW-5000lm-2700K

CANDELA DISTRIBUTION (continued):

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



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1121 Highway 74 South
Peachtree City, GA 30269

Scaled Data Report





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

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Scaled Data Report



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Scaled Data Report





21.5°	2321.4	2333.3	2348.3	2362.9	2373.4	2380.7	2372.4	2369.7	2362.9	2350.1	2333.3
22°	2309.5	2322.3	2337.4	2351.9	2362.4	2370.2	2361.5	2359.2	2352.4	2339.2	2321.9



44°	1422.1	1453.1	1493.2	1528.8	1537.9	1554.7	1524.2	1518.7	1505.5	1494.1	1463.1
44.5°	1387.5	1419.4	1459.0	1493.7	1501.9	1521.9	1490.9	1485.0	1470.0	1459.5	1429.4



66.5°	213.3	215.1	220.2	223.8	221.1	224.7	215.1	216.5	212.9	220.6	220.2
67°	203.7	205.1	209.2	211.5	208.8	212.4	203.7	205.1	200.6	209.2	209.7



89°	2.3	2.7	4.6	5.0	0.9	1.4	0.0	0.5	0.5	1.4	2.7
89.5°	0.5	0.5	0.5	0.5	0.0	0.0	0.0	0.5	0.0	0.5	0.0

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21.5°	2315.9	2308.6	2300.9	2310.5	2313.7	2321.4
22°	2304.5	2296.8	2289.0	2298.6	2301.8	2309.5



44°	1420.3	1401.6	1381.1	1412.1	1410.3	1422.1
44.5°	1387.9	1368.8	1346.4	1377.0	1375.2	1387.5



66.5°	215.6	216.5	217.9	227.4	222.0	213.3
67°	206.0	206.9	207.8	217.0	211.9	203.7



89°	3.2	7.7	7.3	9.1	4.6	2.3
89.5°	0.0	4.1	4.1	5.0	1.8	0.5

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(END OF REPORT)