

Signify Classified - Internal  
Cooper Lighting Solutions Photometric Lab  
1121 Highway 74 South  
Peachtree City, GA 30269



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: P776766

Luminaire Tested: HCDJBS4050CSD-HCD81TRMW-5000lm-3000K

Issue Date: 2/13/2024

**Test Information**

Test Method: LM-79-2019  
Report Number: P776766  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA ( A2312156B044)  
Test Lab:  
Issue Date: 2/13/2024  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: HALO COMMERCIAL  
Catalog Number: HCDJBS4050CSD-HCD81TRMW-5000lm-3000K  
Description: 8 INCH ROUND SHALLOW-WIDE MATTE WHITE TRIM  
Light Source: SELECTABLE LUMENS AND CCT ARRAY 90CRI / 3000K CCT  
Ballast/Driver: -

**Summary**

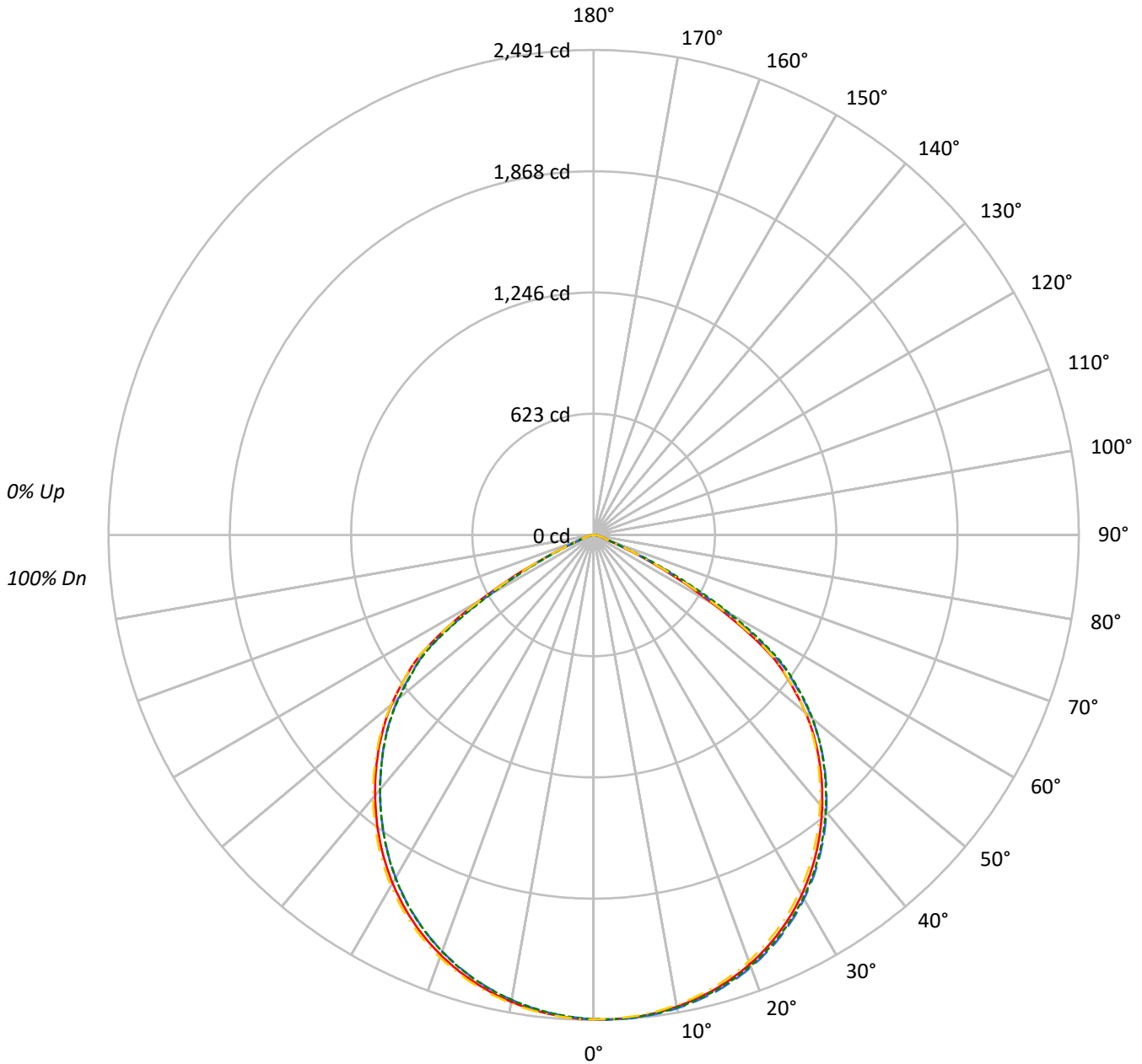
Lumens per Lamp: N/A  
Luminaire Lumens: 5734.1 lumens  
Efficiency: N/A  
Efficacy: 119.5 lumens/watt  
Spacing Criteria (0/90/45): 1.25 / 1.25 / 1.35  
Luminous Opening: Circular (Dia: 0.67' x H: 0')  
CIE Type: Direct

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



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### Luminous Intensity Polar Plot





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

RF	20									20									20									20									
RC	80									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	104	101	109	105	102	99	101	98	96	97	95	93	94	92	91	89																			
2	103	96	90	85	100	94	89	84	91	86	83	87	84	81	85	82	79	77																			
3	95	86	79	73	92	84	78	72	81	76	71	79	74	70	76	72	69	67																			
4	87	77	69	63	85	75	68	63	73	67	62	71	65	61	69	64	60	58																			
5	81	69	61	55	79	68	60	55	66	59	54	64	58	54	62	57	53	51																			
6	75	62	54	48	73	62	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	38	50	43	38	49	43	38	48	42	38	36																			
9	60	48	40	35	59	47	40	35	46	39	35	45	39	34	44	38	34	32																			
10	57	44	37	32	55	44	36	32	43	36	31	42	36	31	41	35	31	29																			

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

	0°	90°	180°	270°
0°	75965	75965	75965	75965
5°	76173	76200	75787	75588
10°	76288	76418	75510	75194
15°	76325	76546	75121	74682
20°	76224	76555	74609	73989
25°	75885	76354	73834	73022
30°	75273	75879	72798	71719
35°	74262	75059	71388	70005
40°	72766	73838	69582	67988
45°	70727	72169	67437	65632
50°	67431	69640	64320	62002
55°	61574	64565	58678	56209
60°	43542	49019	41472	37955
65°	21376	25573	19296	17417
70°	6802	7507	6847	6722
75°	4931	5532	4990	5096
80°	3428	4079	3428	3675
85°	1962	2767	1962	2277

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 67.5°

Vertical Angle: 45°

Luminance: 72329 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	235.6	4.1
10°-20°	675.7	11.8
20°-30°	1022.6	17.8
30°-40°	1219.0	21.3
40°-50°	1230.2	21.5
50°-60°	977.2	17.0
60°-70°	316.8	5.5
70°-80°	48.6	0.8
80°-90°	8.5	0.1
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°	1933.9	33.7
0°-40°	3152.8	55.0
0°-60°	5360.2	93.5
0°-90°	5734.1	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	5734.1	100.0

**CANDELA DISTRIBUTION:**

	0°	90°	180°	270°	360°	Flux
0°	2488	2488	2488	2488	2488	
5°	2486	2486	2473	2466	2486	236
15°	2415	2422	2377	2363	2415	682
25°	2253	2267	2192	2168	2253	1038
35°	1992	2014	1915	1878	1992	1245
45°	1638	1672	1562	1520	1638	1260
55°	1157	1213	1102	1056	1157	998
65°	296	354	267	241	296	320
75°	42	47	42	43	42	46
85°	6	8	6	6	6	7
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°	2488.2	2488.2	2488.2	2488.2	2488.2	2488.2	2488.2	2488.2	2488.2	2488.2	2488.2
0.5°	2489.6	2489.2	2489.2	2489.6	2487.3	2487.8	2488.7	2488.7	2488.2	2487.3	2486.9
1°	2489.6	2489.6	2490.1	2490.6	2488.2	2488.2	2488.2	2488.2	2487.3	2485.9	2485.5
1.5°	2490.1	2490.1	2490.6	2491.0	2488.7	2488.2	2488.2	2487.8	2485.9	2484.5	2483.6
2°	2489.6	2490.1	2491.0	2491.5	2489.2	2488.2	2487.8	2486.9	2485.0	2482.7	2481.7
2.5°	2489.2	2490.1	2491.0	2491.5	2489.2	2488.2	2486.9	2485.5	2483.1	2481.3	2479.9
3°	2489.2	2490.1	2491.0	2491.5	2488.7	2487.8	2486.4	2484.1	2481.7	2479.0	2478.0
3.5°	2488.2	2489.6	2490.6	2491.5	2488.7	2486.9	2485.0	2482.7	2479.9	2476.6	2475.2
4°	2487.8	2489.2	2490.1	2490.6	2488.2	2486.4	2483.6	2480.8	2477.6	2474.3	2472.9
4.5°	2486.4	2488.2	2489.6	2490.1	2487.3	2485.0	2482.2	2479.0	2475.2	2471.5	2469.7
5°	2485.5	2487.3	2489.2	2489.2	2486.4	2484.1	2480.3	2476.6	2472.9	2468.7	2466.9
5.5°	2484.1	2485.9	2487.8	2488.2	2485.0	2482.7	2478.5	2474.3	2469.7	2465.5	2463.6
6°	2482.2	2484.5	2486.4	2486.9	2483.6	2480.8	2476.2	2472.0	2466.9	2462.2	2460.4
6.5°	2480.3	2483.1	2485.0	2485.5	2482.2	2479.0	2473.8	2469.2	2463.6	2458.5	2456.7
7°	2478.0	2481.3	2483.6	2483.6	2480.3	2476.6	2471.5	2466.4	2460.4	2454.8	2452.5
7.5°	2475.7	2479.0	2481.7	2481.7	2478.5	2474.3	2469.2	2462.7	2456.7	2451.1	2448.8
8°	2473.4	2476.6	2479.4	2479.9	2476.2	2472.0	2465.9	2459.4	2452.9	2446.9	2444.1
8.5°	2470.1	2474.3	2477.1	2477.1	2473.8	2468.7	2462.7	2455.7	2448.8	2442.7	2439.9
9°	2467.3	2472.0	2474.8	2474.8	2471.1	2465.9	2459.0	2452.0	2444.6	2438.1	2435.3
9.5°	2464.1	2468.7	2472.0	2472.0	2468.3	2463.2	2455.7	2447.8	2440.4	2433.4	2430.2
10°	2460.8	2465.9	2468.7	2468.7	2465.0	2459.4	2452.0	2443.6	2435.7	2428.3	2425.1
10.5°	2457.1	2462.7	2465.5	2465.5	2461.8	2455.7	2448.3	2439.0	2430.6	2423.2	2419.5
11°	2453.4	2459.0	2462.2	2462.2	2458.0	2452.0	2443.6	2434.4	2425.5	2417.6	2413.9
11.5°	2449.2	2455.3	2458.5	2458.5	2454.3	2447.8	2439.0	2429.7	2420.4	2412.1	2408.3
12°	2445.0	2451.5	2454.8	2454.8	2450.2	2443.6	2434.4	2424.1	2414.8	2406.5	2402.3
12.5°	2440.9	2447.4	2450.6	2450.6	2446.4	2439.0	2429.7	2419.0	2408.8	2400.0	2395.8
13°	2435.7	2442.7	2446.4	2446.0	2441.8	2434.4	2424.6	2413.4	2402.8	2393.9	2389.8
13.5°	2430.6	2437.6	2441.8	2441.3	2437.1	2429.2	2419.5	2407.4	2396.7	2387.4	2382.8
14°	2425.5	2433.0	2437.1	2436.7	2432.0	2424.1	2413.9	2401.8	2390.2	2380.9	2375.8
14.5°	2420.4	2427.9	2432.5	2431.6	2427.4	2418.6	2407.9	2395.3	2383.7	2374.0	2368.9
15°	2414.8	2423.2	2427.4	2426.5	2421.8	2413.4	2401.8	2388.8	2376.7	2366.5	2361.9
15.5°	2408.8	2417.2	2421.8	2420.9	2416.2	2407.4	2395.8	2382.8	2369.8	2359.6	2354.0
16°	2402.8	2411.6	2416.2	2414.8	2410.2	2401.4	2389.3	2375.4	2362.3	2351.7	2346.1
16.5°	2396.7	2405.6	2410.2	2408.8	2404.6	2395.3	2382.8	2368.4	2354.9	2344.2	2338.2
17°	2389.8	2399.5	2404.2	2402.8	2398.6	2388.8	2375.8	2361.0	2347.5	2336.3	2329.8
17.5°	2383.3	2393.0	2398.1	2396.3	2392.1	2382.3	2368.4	2353.5	2339.1	2327.5	2321.5
18°	2376.3	2386.0	2391.1	2389.8	2385.6	2375.4	2361.4	2345.6	2331.2	2319.1	2312.6
18.5°	2369.3	2379.5	2384.6	2382.3	2378.6	2367.9	2354.0	2337.7	2322.9	2310.3	2303.8
19°	2361.4	2372.6	2377.2	2375.8	2371.2	2360.5	2346.1	2329.4	2314.0	2301.0	2294.5
19.5°	2354.0	2365.1	2370.2	2368.4	2363.7	2353.1	2338.2	2321.0	2305.2	2292.2	2285.2
20°	2346.1	2357.2	2362.8	2361.0	2356.3	2345.2	2329.8	2312.6	2296.4	2282.9	2275.5
20.5°	2338.2	2349.3	2354.9	2353.1	2348.4	2337.3	2321.5	2303.3	2286.6	2273.1	2265.7
21°	2329.4	2341.4	2346.6	2345.2	2340.0	2328.9	2312.2	2294.1	2277.3	2262.9	2255.5



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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°	2302.9	2315.4	2321.5	2319.1	2314.5	2302.4	2284.8	2265.7	2247.1	2231.8	2223.9
23°	2293.1	2306.6	2312.2	2310.3	2305.7	2293.1	2275.5	2255.0	2236.4	2221.6	2212.8
23.5°	2283.8	2297.3	2303.3	2301.0	2295.9	2283.8	2265.3	2245.3	2225.8	2210.0	2201.6
24°	2273.6	2287.6	2293.6	2291.7	2286.6	2274.1	2255.0	2234.6	2215.1	2199.3	2190.0
24.5°	2263.4	2277.8	2283.8	2281.5	2276.9	2263.9	2244.8	2223.9	2203.5	2187.2	2177.9
25°	2252.7	2267.6	2273.6	2271.3	2266.6	2253.2	2234.6	2212.8	2191.8	2175.6	2165.8
25.5°	2242.5	2257.4	2263.4	2261.1	2256.4	2243.0	2223.9	2201.1	2180.7	2164.0	2153.8
26°	2231.8	2246.7	2252.7	2250.8	2245.7	2232.3	2212.8	2190.0	2168.6	2151.4	2141.7
26.5°	2220.7	2236.0	2242.5	2240.2	2234.6	2221.6	2201.1	2178.4	2156.5	2138.9	2128.7
27°	2209.0	2224.8	2230.9	2229.0	2223.4	2210.4	2190.0	2166.3	2144.0	2126.3	2115.7
27.5°	2197.4	2213.2	2220.2	2217.4	2212.8	2198.8	2177.9	2154.2	2131.5	2113.3	2102.7
28°	2185.3	2201.6	2208.6	2205.8	2201.1	2187.2	2165.8	2141.2	2118.4	2100.3	2089.6
28.5°	2173.3	2189.5	2196.5	2194.2	2189.1	2175.1	2153.8	2128.7	2105.4	2086.4	2075.7
29°	2161.2	2177.9	2184.4	2182.1	2177.0	2162.6	2140.7	2115.7	2092.4	2073.4	2061.8
29.5°	2148.2	2165.8	2172.3	2170.0	2164.9	2150.5	2128.2	2102.7	2078.5	2059.0	2047.8
30°	2135.2	2152.8	2159.3	2157.5	2152.4	2137.5	2115.2	2089.2	2065.0	2045.0	2033.4
30.5°	2122.6	2139.8	2146.8	2144.5	2139.8	2125.0	2102.2	2075.7	2050.6	2030.6	2018.6
31°	2108.7	2126.8	2133.8	2131.5	2126.3	2111.5	2088.2	2061.8	2036.7	2016.2	2004.2
31.5°	2095.2	2113.3	2120.3	2118.0	2113.3	2098.0	2074.8	2047.4	2022.3	2001.4	1989.3
32°	2081.3	2099.4	2106.8	2104.5	2099.9	2084.5	2060.8	2033.4	2007.4	1986.5	1974.4
32.5°	2066.9	2085.5	2093.4	2090.6	2085.9	2070.6	2046.4	2018.6	1992.5	1971.2	1958.2
33°	2052.9	2071.5	2079.4	2076.6	2072.5	2056.7	2032.0	2004.2	1977.2	1955.8	1943.3
33.5°	2038.1	2057.1	2065.0	2062.7	2058.1	2042.3	2017.2	1988.8	1962.4	1939.6	1927.0
34°	2022.7	2042.3	2050.6	2047.8	2043.2	2027.9	2002.8	1973.5	1946.6	1923.8	1911.2
34.5°	2007.9	2027.4	2035.8	2033.0	2028.3	2012.5	1987.4	1958.2	1930.8	1908.0	1894.5
35°	1992.5	2012.1	2020.9	2018.1	2013.9	1997.7	1972.1	1942.8	1915.4	1891.7	1878.7
35.5°	1976.8	1996.7	2005.6	2002.8	1998.6	1982.3	1956.3	1926.6	1899.2	1875.0	1862.0
36°	1961.0	1981.4	1989.8	1987.9	1983.7	1967.0	1941.0	1910.3	1882.4	1858.8	1845.3
36.5°	1944.7	1965.1	1974.0	1972.1	1967.5	1951.2	1925.2	1894.5	1866.2	1842.0	1828.6
37°	1928.4	1948.9	1958.2	1956.3	1952.1	1935.4	1908.9	1878.7	1849.0	1824.8	1811.8
37.5°	1912.2	1932.6	1942.4	1940.1	1935.9	1918.7	1892.7	1861.5	1832.3	1808.1	1794.2
38°	1895.0	1915.9	1925.6	1923.8	1919.6	1902.9	1875.9	1844.8	1815.5	1790.5	1777.0
38.5°	1878.3	1899.2	1908.9	1907.5	1902.9	1886.2	1859.2	1828.1	1798.4	1773.3	1759.3
39°	1861.1	1882.0	1892.2	1890.3	1886.6	1869.4	1842.5	1810.9	1781.2	1755.6	1742.1
39.5°	1843.4	1864.8	1875.0	1873.6	1869.9	1852.2	1824.8	1793.7	1763.5	1738.0	1724.5
40°	1825.8	1847.1	1858.3	1856.4	1852.7	1835.5	1807.6	1775.6	1745.9	1720.3	1706.4
40.5°	1808.1	1829.5	1840.2	1839.2	1835.5	1817.9	1790.0	1757.9	1728.2	1701.7	1688.7
41°	1789.5	1811.4	1822.5	1821.6	1817.4	1800.2	1772.3	1740.3	1710.1	1684.1	1670.1
41.5°	1770.9	1793.2	1804.4	1803.9	1800.2	1782.6	1754.7	1722.6	1692.4	1666.0	1652.0
42°	1752.8	1775.1	1786.7	1786.3	1782.6	1764.4	1736.6	1705.0	1673.9	1647.4	1633.4
42.5°	1734.2	1756.5	1768.6	1768.2	1764.4	1746.3	1718.4	1686.4	1655.3	1629.3	1615.3
43°	1715.7	1737.5	1750.0	1750.0	1746.8	1728.2	1700.3	1668.3	1637.1	1610.2	1596.7
43.5°	1696.6	1718.9	1731.5	1731.9	1728.2	1709.6	1681.7	1649.7	1618.6	1591.6	1578.1



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**CANDELA DISTRIBUTION (continued):**

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
45°	1638.1	1660.4	1674.3	1675.2	1671.5	1652.9	1625.5	1593.9	1561.9	1534.5	1521.5
45.5°	1617.6	1640.4	1654.3	1656.2	1652.5	1633.4	1606.0	1574.0	1542.8	1515.4	1502.4
46°	1597.7	1620.9	1634.8	1636.7	1633.0	1613.9	1587.0	1554.9	1523.3	1495.9	1482.9
46.5°	1577.2	1599.5	1614.9	1616.7	1613.5	1594.4	1567.0	1535.4	1503.4	1476.4	1463.4
47°	1555.8	1579.1	1594.4	1596.7	1593.9	1574.0	1546.6	1515.0	1483.4	1456.4	1443.0
47.5°	1534.5	1557.7	1573.5	1576.3	1574.0	1553.5	1526.1	1494.5	1463.4	1435.5	1422.5
48°	1513.1	1535.9	1552.6	1555.4	1552.6	1533.1	1507.1	1474.5	1443.0	1415.1	1402.1
48.5°	1490.3	1513.6	1530.3	1534.0	1532.2	1512.6	1484.8	1453.6	1421.6	1394.2	1380.7
49°	1468.0	1491.7	1508.5	1513.1	1510.8	1490.3	1463.4	1431.8	1399.3	1371.9	1358.4
49.5°	1444.4	1468.5	1485.7	1490.3	1489.0	1468.5	1441.1	1409.5	1377.5	1349.6	1335.6
50°	1419.7	1444.4	1462.5	1467.6	1466.2	1446.2	1419.3	1387.2	1354.2	1326.4	1311.9
50.5°	1394.6	1418.8	1438.3	1443.0	1442.5	1423.4	1395.6	1363.1	1330.5	1301.7	1287.8
51°	1370.0	1394.2	1413.2	1419.3	1418.8	1398.4	1370.5	1338.4	1305.4	1277.1	1263.2
51.5°	1343.1	1367.7	1387.2	1393.7	1394.6	1373.7	1345.9	1313.3	1281.3	1253.4	1238.5
52°	1316.6	1342.1	1361.7	1368.2	1368.6	1348.2	1320.3	1287.3	1254.8	1227.4	1212.5
52.5°	1290.1	1314.7	1335.2	1341.2	1342.6	1321.7	1293.8	1261.3	1229.7	1201.8	1187.4
53°	1263.6	1287.8	1308.2	1315.7	1316.1	1295.7	1267.4	1235.3	1204.2	1176.8	1162.8
53.5°	1237.6	1260.8	1281.8	1288.7	1290.1	1270.1	1241.3	1210.7	1180.0	1153.5	1140.1
54°	1212.5	1236.2	1256.2	1264.1	1264.6	1244.1	1216.7	1186.1	1156.8	1129.8	1115.9
54.5°	1186.5	1210.7	1230.6	1238.5	1239.0	1220.0	1192.1	1160.5	1131.2	1104.3	1090.8
55°	1156.8	1180.5	1201.8	1210.2	1213.0	1192.6	1164.7	1132.6	1102.4	1075.9	1062.5
55.5°	1123.8	1147.5	1170.3	1178.6	1182.8	1162.8	1133.6	1101.0	1068.0	1040.6	1028.6
56°	1085.2	1112.2	1133.1	1141.9	1148.9	1129.4	1098.2	1062.9	1029.5	1003.0	990.0
56.5°	1044.4	1072.2	1093.6	1103.4	1111.3	1092.2	1060.6	1023.5	990.0	961.7	948.7
57°	1000.7	1028.1	1051.8	1062.0	1071.3	1050.4	1018.8	982.1	947.3	918.9	905.0
57.5°	954.7	980.7	1008.1	1020.2	1029.5	1007.2	975.6	939.4	904.1	876.2	860.4
58°	906.8	933.3	963.1	977.5	986.7	961.7	929.1	893.8	859.9	831.1	815.3
58.5°	859.9	885.5	916.1	933.3	943.1	916.6	883.6	849.2	815.8	787.9	770.3
59°	810.2	838.1	869.7	888.3	896.6	867.4	835.3	801.9	769.8	742.4	723.8
59.5°	762.4	789.3	821.8	840.9	849.7	820.0	787.0	754.5	724.3	697.3	678.7
60°	713.1	742.4	774.0	794.4	802.8	772.1	738.7	706.1	679.2	653.2	635.1
60.5°	666.7	695.5	725.7	746.1	755.9	726.1	690.4	660.2	634.1	608.6	590.9
61°	619.7	649.5	677.3	697.8	707.1	679.2	643.4	612.3	588.6	565.8	548.2
61.5°	574.2	604.9	630.9	648.5	660.6	635.1	597.4	566.8	544.5	524.0	505.9
62°	530.1	559.3	585.4	600.7	614.6	588.6	552.8	521.7	501.3	483.2	466.0
62.5°	487.3	516.1	540.3	552.4	567.2	544.0	508.2	477.6	461.3	445.1	428.8
63°	446.0	473.4	496.2	506.4	522.2	500.3	469.2	438.1	421.4	407.0	391.2
63.5°	405.6	432.1	451.6	459.5	478.5	460.4	429.7	398.1	381.4	368.4	353.5
64°	366.5	391.2	409.8	415.8	437.2	420.0	390.2	358.2	341.5	330.3	316.4
64.5°	329.8	353.1	368.9	373.5	395.8	380.0	350.8	318.7	302.0	291.8	282.9
65°	295.9	315.9	329.4	333.6	354.0	339.6	311.7	283.9	267.1	258.3	252.3
65.5°	261.6	280.1	292.2	296.4	312.7	299.6	276.4	251.8	235.5	226.7	223.9
66°	226.7	245.8	256.0	260.2	274.6	262.9	244.4	222.5	205.3	197.9	197.4





TEST NUMBER: P776766

CATALOG NUMBER: HCDJBL54050CSD-HCD81TRMW-5000lm-3000K

**CANDELA DISTRIBUTION (continued):**

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
67.5°	148.7	158.4	164.9	168.6	177.0	171.9	161.2	148.2	129.6	130.1	132.9
68°	131.5	140.3	147.7	151.0	151.0	146.3	138.0	129.2	112.0	114.3	116.6
68.5°	114.3	122.6	131.0	133.3	128.7	124.0	118.9	112.4	98.0	102.2	103.1
69°	97.6	105.0	114.3	116.1	110.1	105.9	103.6	98.5	87.8	92.0	92.0
69.5°	80.4	87.3	97.6	98.5	95.2	92.4	90.6	87.3	80.8	83.6	83.2
70°	76.2	79.0	80.8	80.8	84.1	82.7	81.3	79.4	76.7	77.1	77.6
70.5°	72.5	73.9	75.3	75.3	77.1	76.7	76.2	74.8	72.9	73.4	73.4
71°	68.3	70.2	71.5	71.5	72.9	72.9	72.5	71.1	69.2	69.7	70.2
71.5°	64.6	66.9	68.3	68.3	69.7	69.2	68.8	67.4	65.0	66.0	66.4
72°	60.9	63.2	64.6	64.6	66.0	66.0	65.5	64.1	61.8	62.7	63.2
72.5°	57.6	59.5	61.3	61.3	62.7	62.3	61.8	60.4	58.1	59.0	59.9
73°	53.9	56.2	57.6	58.1	59.5	59.0	58.5	57.1	54.8	55.7	56.7
73.5°	50.6	53.0	54.4	54.8	56.2	55.7	55.3	53.9	51.6	52.5	53.4
74°	47.9	49.7	51.6	51.6	53.0	52.5	52.5	50.6	48.3	49.2	50.2
74.5°	44.6	46.5	48.3	48.3	49.7	49.7	49.2	47.4	45.1	46.5	47.4
75°	41.8	43.7	45.5	45.5	46.9	46.5	46.5	44.6	42.3	43.2	44.6
75.5°	39.0	40.9	42.7	42.7	44.1	43.7	43.7	41.8	40.0	40.4	41.8
76°	36.2	38.1	40.0	40.0	41.3	41.3	40.9	39.0	37.2	38.1	39.5
76.5°	33.9	35.3	37.2	37.6	39.0	38.6	38.6	36.7	34.8	35.8	36.7
77°	31.6	33.0	34.8	35.3	36.2	36.2	35.8	34.4	32.1	33.0	34.4
77.5°	29.3	30.7	32.5	33.0	33.9	33.9	33.4	31.6	29.7	30.7	32.1
78°	26.9	28.3	30.2	30.7	31.6	31.6	31.1	29.3	27.4	28.3	29.3
78.5°	25.1	26.5	27.9	28.3	29.3	29.3	28.8	26.9	25.1	26.0	27.4
79°	23.2	24.2	26.0	26.5	26.9	26.9	26.5	24.6	23.2	23.7	25.1
79.5°	20.9	22.3	24.2	24.2	25.1	25.1	24.6	22.8	21.4	21.8	23.2
80°	19.5	20.4	21.8	22.3	23.2	23.2	22.8	20.9	19.5	20.0	21.4
80.5°	17.7	18.6	20.0	20.4	21.4	21.4	20.9	19.0	17.7	18.1	19.5
81°	15.8	16.7	18.6	19.0	19.5	19.5	19.0	17.2	15.8	16.3	17.7
81.5°	14.4	15.3	16.7	17.2	17.7	17.7	17.2	15.8	14.4	14.9	15.8
82°	13.0	13.9	15.3	15.3	16.3	16.3	15.8	13.9	13.0	13.0	14.4
82.5°	11.1	12.1	13.5	13.9	14.4	14.4	13.9	12.5	11.1	11.6	13.0
83°	9.8	10.7	12.1	12.5	13.0	13.0	12.5	11.1	9.8	10.2	11.6
83.5°	8.8	9.3	10.7	11.1	11.6	11.6	11.1	9.8	8.8	8.8	10.2
84°	7.4	7.9	9.3	9.8	10.2	10.2	9.8	8.4	7.4	7.9	8.8
84.5°	6.5	7.0	7.9	8.4	8.8	8.8	8.4	7.0	6.5	6.5	7.4
85°	5.6	6.0	7.0	7.4	7.9	7.9	7.4	6.0	5.6	5.6	6.5
85.5°	4.2	4.6	6.0	6.5	6.5	6.5	6.0	4.6	4.6	4.2	5.6
86°	3.7	3.7	5.1	5.1	5.6	5.6	5.1	3.7	3.7	3.3	4.6
86.5°	2.8	2.8	4.2	4.2	4.6	4.6	4.2	3.3	2.8	2.8	3.7
87°	1.9	2.3	3.3	3.7	3.7	3.7	3.3	2.3	1.9	1.9	2.8
87.5°	1.4	1.9	2.3	2.8	2.8	2.8	2.8	1.9	1.4	1.4	2.3
88°	0.9	1.4	1.9	1.9	2.3	2.3	1.9	1.4	0.9	0.9	1.4
88.5°	0.5	0.9	0.9	1.4	1.4	1.4	1.4	0.9	0.5	0.5	0.9



TEST NUMBER: P776766  
CATALOG NUMBER: HCDJBL54050CSD-HCD81TRMW-5000lm-3000K

**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: P776766

CATALOG NUMBER: HCDJBL54050CSD-HCD81TRMW-5000lm-3000K

**CANDELA DISTRIBUTION (continued):**

	247.5°	270°	292.5°	315°	337.5°	360°
0°	2488.2	2488.2	2488.2	2488.2	2488.2	2488.2
0.5°	2487.3	2485.5	2486.4	2487.8	2489.2	2489.6
1°	2485.9	2484.1	2485.5	2487.3	2489.2	2489.6
1.5°	2484.5	2482.7	2484.1	2486.9	2489.2	2490.1
2°	2482.7	2481.3	2482.7	2485.9	2488.7	2489.6
2.5°	2480.8	2479.4	2481.3	2484.5	2487.8	2489.2
3°	2478.5	2477.1	2479.4	2483.1	2486.9	2489.2
3.5°	2476.2	2474.8	2477.6	2481.7	2485.9	2488.2
4°	2473.4	2472.4	2475.2	2479.9	2484.5	2487.8
4.5°	2470.6	2469.7	2472.9	2478.0	2483.1	2486.4
5°	2467.8	2466.4	2470.6	2475.7	2481.3	2485.5
5.5°	2464.1	2463.6	2467.8	2473.4	2479.4	2484.1
6°	2460.8	2460.4	2464.6	2471.1	2477.1	2482.2
6.5°	2457.6	2456.7	2461.3	2467.8	2474.8	2480.3
7°	2453.4	2452.9	2458.5	2465.0	2472.4	2478.0
7.5°	2449.7	2448.8	2454.8	2461.8	2469.7	2475.7
8°	2445.0	2444.6	2450.6	2458.0	2466.9	2473.4
8.5°	2440.9	2439.9	2446.4	2454.8	2463.2	2470.1
9°	2436.2	2435.3	2441.8	2450.6	2459.9	2467.3
9.5°	2431.1	2430.6	2437.6	2446.4	2456.2	2464.1
10°	2426.0	2425.5	2433.0	2442.3	2452.5	2460.8
10.5°	2420.4	2420.4	2427.9	2437.6	2448.3	2457.1
11°	2415.3	2414.8	2422.7	2433.0	2444.1	2453.4
11.5°	2409.3	2409.3	2417.2	2427.9	2439.9	2449.2
12°	2403.2	2403.2	2411.6	2422.7	2434.8	2445.0
12.5°	2397.2	2397.2	2406.0	2417.2	2430.2	2440.9
13°	2390.7	2390.7	2400.0	2411.6	2425.1	2435.7
13.5°	2383.7	2384.2	2393.5	2405.6	2419.5	2430.6
14°	2376.7	2376.7	2387.0	2399.5	2413.9	2425.5
14.5°	2369.8	2369.8	2380.5	2393.5	2407.9	2420.4
15°	2362.8	2362.8	2373.5	2387.0	2401.8	2414.8
15.5°	2354.9	2355.4	2365.6	2380.0	2395.8	2408.8
16°	2347.0	2347.5	2358.2	2373.0	2389.3	2402.8
16.5°	2339.1	2339.6	2350.7	2365.6	2382.3	2396.7
17°	2331.2	2331.7	2342.8	2358.2	2375.4	2389.8
17.5°	2321.9	2322.9	2334.9	2350.7	2368.4	2383.3
18°	2313.6	2314.5	2326.1	2342.8	2360.5	2376.3
18.5°	2304.7	2305.2	2317.7	2334.5	2353.1	2369.3
19°	2295.4	2296.4	2308.9	2326.1	2345.2	2361.4
19.5°	2286.2	2286.6	2299.6	2317.7	2337.3	2354.0
20°	2276.4	2277.3	2290.3	2308.9	2328.4	2346.1
20.5°	2266.2	2267.1	2281.0	2299.6	2320.1	2338.2
21°	2256.0	2256.9	2270.8	2290.3	2311.2	2329.4

TEST NUMBER: P776766

CATALOG NUMBER: HCDJBLS4050CSD-HCD81TRMW-5000lm-3000K

**CANDELA DISTRIBUTION (continued):**

	247.5°	270°	292.5°	315°	337.5°	360°
22.5°	2223.9	2225.3	2240.6	2260.6	2283.4	2302.9
23°	2213.2	2214.1	2229.5	2250.4	2273.6	2293.1
23.5°	2201.6	2203.0	2218.8	2240.2	2263.4	2283.8
24°	2190.0	2191.4	2207.6	2229.0	2253.2	2273.6
24.5°	2178.4	2179.8	2195.6	2218.3	2242.5	2263.4
25°	2166.3	2167.7	2184.0	2206.7	2231.8	2252.7
25.5°	2153.8	2155.6	2172.3	2195.6	2220.7	2242.5
26°	2141.7	2143.1	2160.3	2183.5	2209.5	2231.8
26.5°	2128.7	2130.5	2148.2	2171.9	2197.4	2220.7
27°	2115.7	2117.5	2135.2	2159.3	2185.8	2209.0
27.5°	2102.7	2104.0	2122.2	2146.8	2173.7	2197.4
28°	2089.2	2090.6	2109.2	2134.2	2161.7	2185.3
28.5°	2075.2	2077.1	2096.1	2121.2	2149.1	2173.3
29°	2061.3	2063.2	2081.7	2108.2	2136.1	2161.2
29.5°	2046.9	2049.2	2068.3	2094.8	2123.1	2148.2
30°	2032.0	2034.4	2054.3	2080.8	2110.1	2135.2
30.5°	2017.6	2020.0	2039.5	2066.9	2096.1	2122.6
31°	2003.2	2005.1	2025.5	2052.9	2082.2	2108.7
31.5°	1987.9	1990.2	2010.7	2038.5	2068.3	2095.2
32°	1972.6	1974.4	1995.3	2024.1	2054.3	2081.3
32.5°	1956.8	1959.1	1980.0	2008.8	2039.9	2066.9
33°	1941.4	1943.8	1965.1	1993.9	2025.5	2052.9
33.5°	1925.6	1927.5	1948.9	1979.1	2010.2	2038.1
34°	1909.4	1911.2	1933.1	1963.3	1994.9	2022.7
34.5°	1892.7	1895.5	1917.3	1947.5	1979.5	2007.9
35°	1876.4	1878.3	1901.0	1931.7	1963.7	1992.5
35.5°	1860.1	1862.5	1884.3	1915.4	1947.9	1976.8
36°	1843.4	1845.3	1868.0	1899.2	1931.7	1961.0
36.5°	1826.2	1829.0	1851.3	1882.9	1915.9	1944.7
37°	1809.5	1811.8	1834.1	1866.2	1899.2	1928.4
37.5°	1791.9	1794.2	1816.9	1849.0	1882.4	1912.2
38°	1774.7	1776.5	1799.3	1831.8	1865.3	1895.0
38.5°	1757.5	1759.3	1782.1	1814.6	1848.1	1878.3
39°	1739.4	1741.7	1764.4	1797.4	1830.9	1861.1
39.5°	1721.7	1723.6	1746.8	1779.3	1813.7	1843.4
40°	1704.0	1705.9	1728.7	1761.7	1796.0	1825.8
40.5°	1685.9	1687.8	1710.1	1743.5	1778.4	1808.1
41°	1668.3	1669.7	1692.4	1725.4	1759.8	1789.5
41.5°	1649.7	1650.6	1673.4	1706.8	1741.7	1770.9
42°	1631.6	1633.0	1655.3	1689.2	1723.6	1752.8
42.5°	1613.5	1613.9	1636.7	1670.6	1704.5	1734.2
43°	1594.4	1595.8	1618.6	1651.6	1685.9	1715.7
43.5°	1575.8	1576.8	1599.1	1632.5	1666.9	1696.6



TEST NUMBER: P776766

CATALOG NUMBER: HCDJBL54050CSD-HCD81TRMW-5000lm-3000K

**CANDELA DISTRIBUTION (continued):**

	247.5°	270°	292.5°	315°	337.5°	360°
45°	1519.6	1520.1	1541.4	1574.9	1609.3	1638.1
45.5°	1500.6	1500.6	1521.9	1555.4	1588.8	1617.6
46°	1481.1	1480.6	1502.0	1535.4	1568.9	1597.7
46.5°	1461.5	1460.1	1482.0	1515.0	1548.4	1577.2
47°	1441.6	1440.6	1461.1	1494.1	1527.5	1555.8
47.5°	1420.7	1419.3	1439.2	1472.7	1506.1	1534.5
48°	1399.8	1397.9	1417.9	1450.9	1483.8	1513.1
48.5°	1378.4	1375.6	1396.0	1428.6	1461.5	1490.3
49°	1356.1	1353.3	1373.3	1405.3	1439.2	1468.0
49.5°	1333.3	1330.1	1349.6	1382.6	1415.5	1444.4
50°	1309.6	1305.4	1325.4	1357.5	1391.4	1419.7
50.5°	1285.5	1281.8	1300.8	1332.9	1365.8	1394.6
51°	1260.8	1256.7	1276.2	1308.2	1340.8	1370.0
51.5°	1235.8	1231.6	1250.2	1283.1	1315.2	1343.1
52°	1209.7	1206.5	1225.5	1257.1	1288.7	1316.6
52.5°	1184.7	1181.4	1200.5	1231.1	1260.8	1290.1
53°	1160.5	1157.7	1176.3	1206.5	1236.2	1263.6
53.5°	1136.8	1134.9	1153.5	1182.8	1211.6	1237.6
54°	1114.0	1111.7	1129.8	1159.6	1187.4	1212.5
54.5°	1088.5	1085.7	1104.3	1133.1	1161.0	1186.5
55°	1061.1	1056.0	1075.9	1104.8	1132.6	1156.8
55.5°	1028.6	1020.7	1040.6	1069.4	1097.8	1123.8
56°	989.1	981.6	1002.1	1030.4	1059.2	1085.2
56.5°	947.7	939.8	959.8	989.5	1017.4	1044.4
57°	905.0	895.7	916.1	945.9	975.1	1000.7
57.5°	860.4	849.7	872.0	901.7	930.1	954.7
58°	815.3	803.2	826.9	857.1	884.5	906.8
58.5°	768.4	757.7	781.4	812.1	834.8	859.9
59°	721.5	710.8	735.4	764.7	788.8	810.2
59.5°	675.5	666.7	690.4	719.2	741.5	762.4
60°	629.5	621.6	645.8	672.7	692.7	713.1
60.5°	584.9	577.5	601.2	626.2	643.9	666.7
61°	540.3	533.3	556.6	579.8	597.9	619.7
61.5°	498.9	492.9	513.8	535.7	552.8	574.2
62°	461.3	451.1	472.9	490.6	506.8	530.1
62.5°	424.2	412.1	432.1	447.4	464.1	487.3
63°	387.0	374.4	392.1	405.6	421.4	446.0
63.5°	349.8	338.2	354.5	365.6	381.4	405.6
64°	312.7	303.4	316.8	327.1	341.9	366.5
64.5°	281.5	271.8	282.0	291.3	306.6	329.8
65°	252.3	241.1	249.0	256.9	272.2	295.9
65.5°	224.9	213.7	217.9	225.3	240.2	261.6
66°	198.8	187.7	188.6	196.5	210.9	226.7



TEST NUMBER: P776766

CATALOG NUMBER: HCDJBL54050CSD-HCD81TRMW-5000lm-3000K

**CANDELA DISTRIBUTION (continued):**

	247.5°	270°	292.5°	315°	337.5°	360°
67.5°	135.7	133.8	132.9	138.9	143.6	148.7
68°	118.5	118.5	118.0	122.6	126.8	131.5
68.5°	104.1	103.1	103.1	106.4	110.6	114.3
69°	92.4	87.8	88.3	90.1	93.8	97.6
69.5°	83.2	79.9	80.4	81.8	83.6	80.4
70°	77.1	75.3	75.7	76.7	77.1	76.2
70.5°	73.4	72.0	72.5	72.9	72.9	72.5
71°	70.2	68.3	68.8	69.7	69.7	68.3
71.5°	66.4	65.0	65.5	66.0	66.0	64.6
72°	63.2	61.3	61.8	62.7	62.3	60.9
72.5°	59.5	58.1	58.5	59.5	59.0	57.6
73°	56.2	54.8	55.3	55.7	55.3	53.9
73.5°	53.4	52.0	52.0	53.0	52.0	50.6
74°	50.2	48.8	49.2	49.7	49.2	47.9
74.5°	47.4	46.0	46.5	46.9	46.0	44.6
75°	44.6	43.2	43.7	43.7	43.2	41.8
75.5°	41.8	40.4	40.9	41.3	40.4	39.0
76°	39.5	38.1	38.1	38.6	37.6	36.2
76.5°	36.7	35.3	35.8	35.8	34.8	33.9
77°	34.4	33.0	33.4	33.4	32.5	31.6
77.5°	32.1	30.7	31.1	31.1	30.2	29.3
78°	29.7	28.8	28.8	29.3	27.9	26.9
78.5°	27.4	26.5	26.9	26.9	26.0	25.1
79°	25.6	24.6	24.6	25.1	23.7	23.2
79.5°	23.7	22.8	22.8	22.8	21.8	20.9
80°	21.8	20.9	20.9	20.9	20.0	19.5
80.5°	20.0	19.0	19.0	19.0	18.1	17.7
81°	18.1	17.7	17.7	17.7	16.7	15.8
81.5°	16.3	15.8	16.3	15.8	14.9	14.4
82°	14.9	14.4	14.4	14.4	13.5	13.0
82.5°	13.5	13.0	13.0	13.0	11.6	11.1
83°	12.1	11.1	11.6	11.1	10.2	9.8
83.5°	10.7	10.2	10.2	9.8	8.8	8.8
84°	9.3	8.8	8.8	8.8	7.9	7.4
84.5°	7.9	7.4	7.9	7.4	6.5	6.5
85°	7.0	6.5	6.5	6.5	5.6	5.6
85.5°	6.0	5.6	5.6	5.6	4.2	4.2
86°	4.6	4.6	4.6	4.6	3.7	3.7
86.5°	4.2	3.7	3.7	3.7	2.8	2.8
87°	3.3	2.8	2.8	2.8	2.3	1.9
87.5°	2.3	1.9	1.9	1.9	1.9	1.4
88°	1.4	1.4	1.4	1.4	0.9	0.9
88.5°	0.9	0.5	0.5	0.5	0.5	0.5



TEST NUMBER: P776766

CATALOG NUMBER: HCDJBL54050CSD-HCD81TRMW-5000lm-3000K

**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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Scaled Data Report



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Scaled Data Report





21.5°	2320.5	2333.1	2338.7	2336.8	2331.7	2320.1	2303.3	2284.8	2267.6	2252.7	2245.3
22°	2311.7	2324.7	2329.8	2328.4	2323.3	2311.2	2294.1	2275.5	2257.8	2243.0	2234.6



44°	1677.1	1699.9	1712.4	1712.9	1709.2	1691.0	1663.2	1631.6	1599.5	1572.6	1559.6
44.5°	1657.6	1679.9	1692.9	1694.3	1691.0	1671.5	1644.1	1612.5	1580.9	1554.0	1540.5



66.5°	194.7	215.1	223.0	227.2	239.7	230.0	213.7	194.7	177.0	171.9	173.7
67°	165.9	185.4	192.3	196.0	207.7	199.8	185.8	170.5	151.0	149.1	151.9



89°	0.0	0.5	0.5	0.5	0.9	0.5	0.5	0.5	0.0	0.0	0.0
89.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0



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21.5°	2245.7	2247.1	2261.1	2281.0	2302.0	2320.5
22°	2235.1	2236.4	2250.8	2270.8	2292.7	2311.7



44°	1557.2	1558.2	1580.5	1613.9	1647.8	1677.1
44.5°	1538.7	1539.1	1561.0	1594.9	1628.8	1657.6



66.5°	175.6	164.9	163.1	171.0	185.4	194.7
67°	155.2	149.6	147.7	154.7	160.3	165.9

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Scaled Data Report



89°	0.0	0.0	0.0	0.0	0.0	0.0
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)