

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: P776768

Luminaire Tested: HCDJBS4050CSD-HCD81TRMW-5000lm-4000K

Issue Date: 2/13/2024

Test Information

Test Method: LM-79-2019
Report Number: P776768
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-4000K
Description: 8 INCH ROUND SHALLOW-WIDE MATTE WHITE TRIM
Light Source: SELECTABLE LUMENS AND CCT ARRAY 90CRI / 4000K CCT
Ballast/Driver: -

Summary

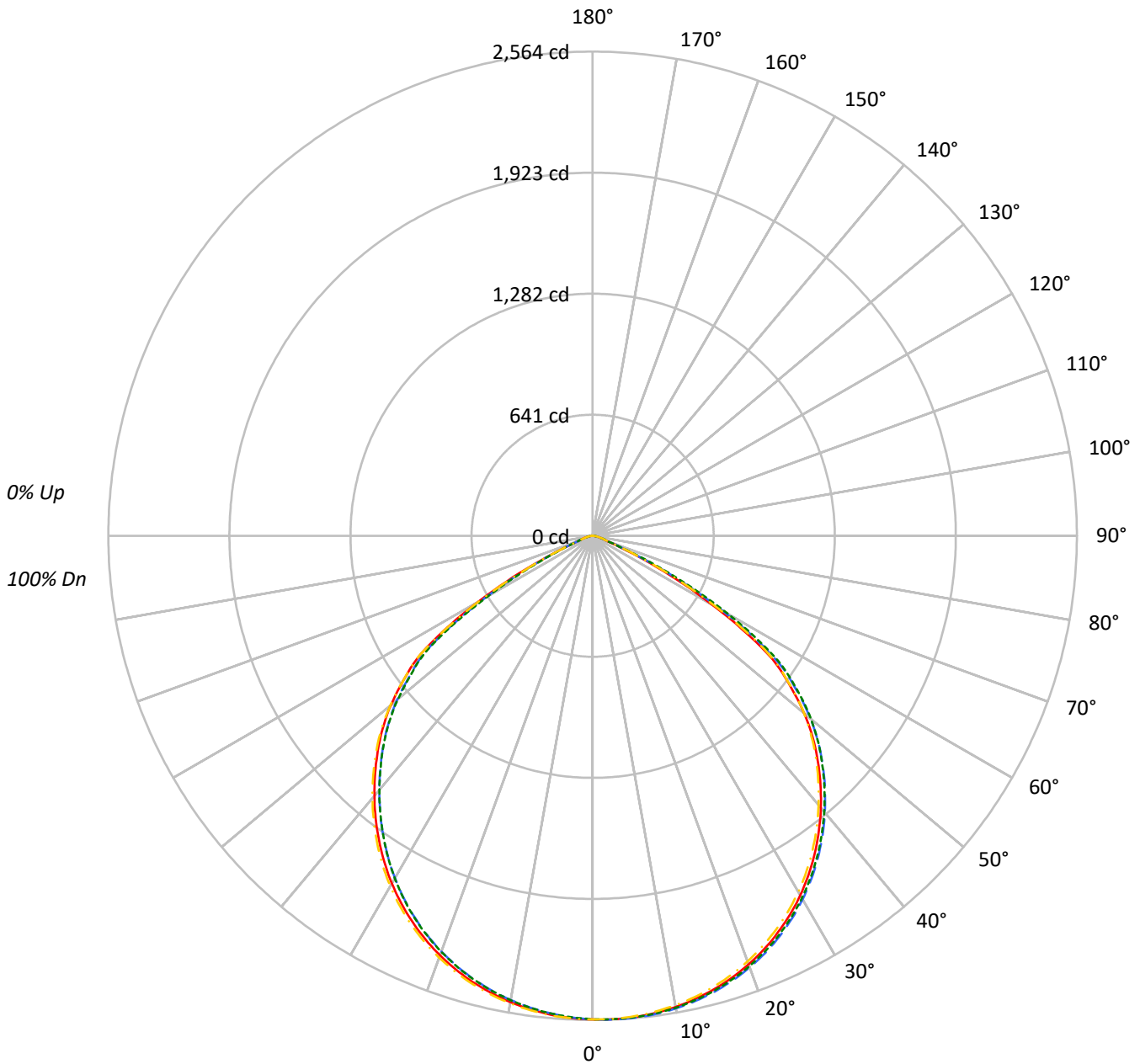
Lumens per Lamp: N/A
Luminaire Lumens: 5903.1 lumens
Efficiency: N/A
Efficacy: 123.0 lumens/watt
Spacing Criteria (0/90/45): 1.25 / 1.25 / 1.35
Luminous Opening: Circular (Dia: 0.67' x H: 0')
CIE Type: Direct

Input Watts (W): 48
Input Voltage (V): NR
Input Current (A_{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



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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								
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°	78206	78206	78206	78206
5°	78416	78447	78021	77816
10°	78539	78672	77736	77410
15°	78576	78803	77337	76882
20°	78469	78813	76809	76169
25°	78122	78604	76010	75175
30°	77490	78114	74945	73831
35°	76453	77273	73494	72066
40°	74910	76014	71630	69992
45°	72813	74298	69423	67567
50°	69421	71691	66215	63831
55°	63389	66466	60408	57864
60°	44825	50460	42694	39073
65°	22012	26325	19866	17930
70°	6998	7730	7043	6918
75°	5072	5697	5131	5249
80°	3534	4202	3534	3780
85°	1997	2837	1997	2347

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 67.5°
 Vertical Angle: 45°
 Luminance: 74462 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	242.5	4.1
10°-20°	695.6	11.8
20°-30°	1052.7	17.8
30°-40°	1254.9	21.3
40°-50°	1266.5	21.5
50°-60°	1006.0	17.0
60°-70°	326.2	5.5
70°-80°	50.0	0.8
80°-90°	8.7	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°	1990.8	33.7
0°-40°	3245.8	55.0
0°-60°	5518.2	93.5
0°-90°	5903.1	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	5903.1	100.0

CANDELA DISTRIBUTION:

	0°	90°	180°	270°	360°	Flux
0°	2562	2562	2562	2562	2562	
5°	2559	2560	2546	2539	2559	243
15°	2486	2493	2447	2432	2486	702
25°	2319	2333	2256	2232	2319	1069
35°	2051	2073	1972	1934	2051	1282
45°	1686	1721	1608	1565	1686	1297
55°	1191	1249	1135	1087	1191	1027
65°	305	364	275	248	305	329
75°	43	48	44	44	43	47
85°	6	8	6	7	6	8
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°	2561.6	2561.6	2561.6	2561.6	2561.6	2561.6	2561.6	2561.6	2561.6	2561.6	2561.6
0.5°	2563.0	2562.5	2562.5	2563.0	2560.6	2561.1	2562.1	2562.1	2561.6	2560.6	2560.1
1°	2563.0	2563.0	2563.5	2564.0	2561.6	2561.6	2561.6	2561.6	2560.6	2559.2	2558.7
1.5°	2563.5	2563.5	2564.0	2564.4	2562.1	2561.6	2561.6	2561.1	2559.2	2557.8	2556.8
2°	2563.0	2563.5	2564.4	2564.9	2562.5	2561.6	2561.1	2560.1	2558.2	2555.8	2554.9
2.5°	2562.5	2563.5	2564.4	2564.9	2562.5	2561.6	2560.1	2558.7	2556.3	2554.4	2553.0
3°	2562.5	2563.5	2564.4	2564.9	2562.1	2561.1	2559.7	2557.3	2554.9	2552.0	2551.1
3.5°	2561.6	2563.0	2564.0	2564.9	2562.1	2560.1	2558.2	2555.8	2553.0	2549.6	2548.2
4°	2561.1	2562.5	2563.5	2564.0	2561.6	2559.7	2556.8	2553.9	2550.6	2547.2	2545.8
4.5°	2559.7	2561.6	2563.0	2563.5	2560.6	2558.2	2555.4	2552.0	2548.2	2544.4	2542.4
5°	2558.7	2560.6	2562.5	2562.5	2559.7	2557.3	2553.4	2549.6	2545.8	2541.5	2539.6
5.5°	2557.3	2559.2	2561.1	2561.6	2558.2	2555.8	2551.5	2547.2	2542.4	2538.1	2536.2
6°	2555.4	2557.8	2559.7	2560.1	2556.8	2553.9	2549.1	2544.8	2539.6	2534.8	2532.9
6.5°	2553.4	2556.3	2558.2	2558.7	2555.4	2552.0	2546.8	2542.0	2536.2	2531.0	2529.1
7°	2551.1	2554.4	2556.8	2556.8	2553.4	2549.6	2544.4	2539.1	2532.9	2527.1	2524.8
7.5°	2548.7	2552.0	2554.9	2554.9	2551.5	2547.2	2542.0	2535.3	2529.1	2523.3	2520.9
8°	2546.3	2549.6	2552.5	2553.0	2549.1	2544.8	2538.6	2531.9	2525.2	2519.0	2516.1
8.5°	2542.9	2547.2	2550.1	2550.1	2546.8	2541.5	2535.3	2528.1	2520.9	2514.7	2511.8
9°	2540.1	2544.8	2547.7	2547.7	2543.9	2538.6	2531.4	2524.3	2516.6	2509.9	2507.1
9.5°	2536.7	2541.5	2544.8	2544.8	2541.0	2535.8	2528.1	2520.0	2512.3	2505.1	2501.8
10°	2533.4	2538.6	2541.5	2541.5	2537.7	2531.9	2524.3	2515.7	2507.5	2499.9	2496.5
10.5°	2529.5	2535.3	2538.1	2538.1	2534.3	2528.1	2520.4	2510.9	2502.3	2494.6	2490.8
11°	2525.7	2531.4	2534.8	2534.8	2530.5	2524.3	2515.7	2506.1	2497.0	2488.9	2485.1
11.5°	2521.4	2527.6	2531.0	2531.0	2526.7	2520.0	2510.9	2501.3	2491.8	2483.1	2479.3
12°	2517.1	2523.8	2527.1	2527.1	2522.4	2515.7	2506.1	2495.6	2486.0	2477.4	2473.1
12.5°	2512.8	2519.5	2522.8	2522.8	2518.5	2510.9	2501.3	2490.3	2479.8	2470.7	2466.4
13°	2507.5	2514.7	2518.5	2518.1	2513.8	2506.1	2496.1	2484.6	2473.6	2464.5	2460.2
13.5°	2502.3	2509.4	2513.8	2513.3	2509.0	2500.8	2490.8	2478.4	2467.4	2457.8	2453.0
14°	2497.0	2504.7	2509.0	2508.5	2503.7	2495.6	2485.1	2472.6	2460.7	2451.1	2445.8
14.5°	2491.8	2499.4	2504.2	2503.2	2498.9	2489.8	2478.8	2465.9	2454.0	2443.9	2438.7
15°	2486.0	2494.6	2498.9	2498.0	2493.2	2484.6	2472.6	2459.2	2446.8	2436.3	2431.5
15.5°	2479.8	2488.4	2493.2	2492.2	2487.4	2478.4	2466.4	2453.0	2439.6	2429.1	2423.4
16°	2473.6	2482.7	2487.4	2486.0	2481.2	2472.1	2459.7	2445.4	2432.0	2421.0	2415.2
16.5°	2467.4	2476.4	2481.2	2479.8	2475.5	2465.9	2453.0	2438.2	2424.3	2413.3	2407.1
17°	2460.2	2470.2	2475.0	2473.6	2469.3	2459.2	2445.8	2430.5	2416.7	2405.2	2398.5
17.5°	2453.5	2463.5	2468.8	2466.9	2462.6	2452.5	2438.2	2422.9	2408.1	2396.1	2389.9
18°	2446.3	2456.4	2461.6	2460.2	2455.9	2445.4	2431.0	2414.8	2399.9	2387.5	2380.8
18.5°	2439.1	2449.7	2454.9	2452.5	2448.7	2437.7	2423.4	2406.6	2391.3	2378.4	2371.7
19°	2431.0	2442.5	2447.3	2445.8	2441.1	2430.1	2415.2	2398.0	2382.2	2368.8	2362.1
19.5°	2423.4	2434.8	2440.1	2438.2	2433.4	2422.4	2407.1	2389.4	2373.1	2359.8	2352.6
20°	2415.2	2426.7	2432.4	2430.5	2425.8	2414.3	2398.5	2380.8	2364.1	2350.2	2342.5
20.5°	2407.1	2418.6	2424.3	2422.4	2417.6	2406.1	2389.9	2371.2	2354.0	2340.1	2332.5
21°	2398.0	2410.4	2415.7	2414.3	2409.0	2397.5	2380.3	2361.7	2344.4	2329.6	2322.0

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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°	2370.8	2383.7	2389.9	2387.5	2382.7	2370.3	2352.1	2332.5	2313.4	2297.6	2289.4
23°	2360.7	2374.6	2380.3	2378.4	2373.6	2360.7	2342.5	2321.5	2302.4	2287.1	2278.0
23.5°	2351.1	2365.0	2371.2	2368.8	2363.6	2351.1	2332.0	2311.4	2291.4	2275.1	2266.5
24°	2340.6	2355.0	2361.2	2359.3	2354.0	2341.1	2321.5	2300.4	2280.4	2264.1	2254.5
24.5°	2330.1	2344.9	2351.1	2348.8	2344.0	2330.6	2311.0	2289.4	2268.4	2251.7	2242.1
25°	2319.1	2334.4	2340.6	2338.2	2333.4	2319.6	2300.4	2278.0	2256.4	2239.7	2229.7
25.5°	2308.6	2323.9	2330.1	2327.7	2322.9	2309.1	2289.4	2266.0	2245.0	2227.7	2217.2
26°	2297.6	2312.9	2319.1	2317.2	2311.9	2298.1	2278.0	2254.5	2232.5	2214.8	2204.8
26.5°	2286.1	2301.9	2308.6	2306.2	2300.4	2287.1	2266.0	2242.6	2220.1	2201.9	2191.4
27°	2274.1	2290.4	2296.6	2294.7	2289.0	2275.6	2254.5	2230.1	2207.2	2189.0	2178.0
27.5°	2262.2	2278.4	2285.6	2282.7	2278.0	2263.6	2242.1	2217.7	2194.3	2175.6	2164.6
28°	2249.7	2266.5	2273.7	2270.8	2266.0	2251.7	2229.7	2204.3	2180.9	2162.2	2151.2
28.5°	2237.3	2254.1	2261.2	2258.8	2253.6	2239.2	2217.2	2191.4	2167.5	2147.9	2136.9
29°	2224.9	2242.1	2248.8	2246.4	2241.1	2226.3	2203.8	2178.0	2154.1	2134.5	2122.5
29.5°	2211.5	2229.7	2236.4	2234.0	2228.7	2213.9	2190.9	2164.6	2139.7	2119.7	2108.2
30°	2198.1	2216.3	2223.0	2221.1	2215.8	2200.5	2177.5	2150.7	2125.9	2105.3	2093.4
30.5°	2185.2	2202.9	2210.1	2207.7	2202.9	2187.6	2164.1	2136.9	2111.1	2090.5	2078.1
31°	2170.8	2189.5	2196.7	2194.3	2189.0	2173.7	2149.8	2122.5	2096.7	2075.7	2063.2
31.5°	2157.0	2175.6	2182.8	2180.4	2175.6	2159.8	2135.9	2107.7	2081.9	2060.4	2047.9
32°	2142.6	2161.3	2168.9	2166.5	2161.7	2146.0	2121.6	2093.4	2066.6	2045.1	2032.6
32.5°	2127.8	2146.9	2155.1	2152.2	2147.4	2131.6	2106.7	2078.1	2051.3	2029.3	2015.9
33°	2113.4	2132.6	2140.7	2137.8	2133.5	2117.3	2091.9	2063.2	2035.5	2013.5	2000.6
33.5°	2098.1	2117.7	2125.9	2123.5	2118.7	2102.4	2076.6	2047.4	2020.2	1996.7	1983.8
34°	2082.4	2102.4	2111.1	2108.2	2103.4	2087.6	2061.8	2031.7	2003.9	1980.5	1967.6
34.5°	2067.1	2087.1	2095.7	2092.9	2088.1	2071.8	2046.0	2015.9	1987.7	1964.2	1950.4
35°	2051.3	2071.4	2080.4	2077.6	2073.3	2056.5	2030.2	2000.1	1971.9	1947.5	1934.1
35.5°	2035.0	2055.6	2064.7	2061.8	2057.5	2040.7	2014.0	1983.4	1955.1	1930.3	1916.9
36°	2018.7	2039.8	2048.4	2046.5	2042.2	2025.0	1998.2	1966.6	1937.9	1913.5	1899.7
36.5°	2002.0	2023.1	2032.1	2030.2	2025.4	2008.7	1981.9	1950.4	1921.2	1896.3	1882.4
37°	1985.3	2006.3	2015.9	2014.0	2009.7	1992.4	1965.2	1934.1	1903.5	1878.6	1865.2
37.5°	1968.5	1989.6	1999.6	1997.2	1992.9	1975.2	1948.4	1916.4	1886.3	1861.4	1847.1
38°	1950.8	1972.4	1982.4	1980.5	1976.2	1959.0	1931.2	1899.2	1869.1	1843.2	1829.4
38.5°	1933.6	1955.1	1965.2	1963.7	1959.0	1941.7	1914.0	1882.0	1851.4	1825.5	1811.2
39°	1915.9	1937.4	1948.0	1946.1	1942.2	1924.5	1896.8	1864.3	1833.7	1807.4	1793.5
39.5°	1897.7	1919.7	1930.3	1928.8	1925.0	1906.8	1878.6	1846.6	1815.5	1789.2	1775.3
40°	1879.6	1901.6	1913.1	1911.1	1907.3	1889.6	1860.9	1827.9	1797.3	1771.0	1756.7
40.5°	1861.4	1883.4	1894.4	1893.4	1889.6	1871.4	1842.7	1809.7	1779.1	1751.9	1738.5
41°	1842.3	1864.7	1876.2	1875.3	1871.0	1853.3	1824.6	1791.6	1760.5	1733.7	1719.4
41.5°	1823.1	1846.1	1857.6	1857.1	1853.3	1835.1	1806.4	1773.4	1742.3	1715.1	1700.7
42°	1804.5	1827.4	1839.4	1838.9	1835.1	1816.4	1787.7	1755.2	1723.2	1695.9	1681.6
42.5°	1785.4	1808.3	1820.7	1820.3	1816.4	1797.8	1769.1	1736.1	1704.1	1677.3	1662.9
43°	1766.2	1788.7	1801.6	1801.6	1798.3	1779.1	1750.4	1717.4	1685.4	1657.7	1643.8
43.5°	1746.6	1769.6	1782.5	1783.0	1779.1	1760.0	1731.3	1698.3	1666.3	1638.5	1624.7



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
45°	1686.4	1709.3	1723.7	1724.6	1720.8	1701.7	1673.4	1640.9	1607.9	1579.7	1566.3
45.5°	1665.3	1688.7	1703.1	1705.0	1701.2	1681.6	1653.4	1620.4	1588.3	1560.1	1546.7
46°	1644.7	1668.7	1683.0	1684.9	1681.1	1661.5	1633.7	1600.7	1568.2	1540.0	1526.6
46.5°	1623.7	1646.7	1662.4	1664.4	1661.0	1641.4	1613.2	1580.7	1547.7	1519.9	1506.5
47°	1601.7	1625.6	1641.4	1643.8	1640.9	1620.4	1592.1	1559.6	1527.1	1499.4	1485.5
47.5°	1579.7	1603.6	1619.9	1622.7	1620.4	1599.3	1571.1	1538.6	1506.5	1477.8	1464.4
48°	1557.7	1581.1	1598.4	1601.2	1598.4	1578.3	1551.5	1518.0	1485.5	1456.8	1443.4
48.5°	1534.3	1558.2	1575.4	1579.2	1577.3	1557.2	1528.5	1496.5	1463.5	1435.3	1421.4
49°	1511.3	1535.7	1552.9	1557.7	1555.3	1534.3	1506.5	1474.0	1440.5	1412.3	1398.4
49.5°	1486.9	1511.8	1529.5	1534.3	1532.8	1511.8	1483.6	1451.1	1418.1	1389.4	1375.0
50°	1461.6	1486.9	1505.6	1510.8	1509.4	1488.8	1461.1	1428.1	1394.1	1365.4	1350.6
50.5°	1435.7	1460.6	1480.7	1485.5	1485.0	1465.4	1436.7	1403.2	1369.7	1340.1	1325.7
51°	1410.4	1435.3	1454.9	1461.1	1460.6	1439.6	1410.9	1377.9	1343.9	1314.7	1300.4
51.5°	1382.7	1408.0	1428.1	1434.8	1435.7	1414.2	1385.5	1352.0	1319.0	1290.4	1275.0
52°	1355.4	1381.7	1401.8	1408.5	1409.0	1387.9	1359.2	1325.3	1291.8	1263.6	1248.3
52.5°	1328.1	1353.5	1374.5	1380.7	1382.2	1360.7	1332.0	1298.5	1266.0	1237.3	1222.4
53°	1300.9	1325.7	1346.8	1354.4	1354.9	1333.9	1304.7	1271.7	1239.7	1211.4	1197.1
53.5°	1274.1	1298.0	1319.5	1326.7	1328.1	1307.6	1277.9	1246.4	1214.8	1187.5	1173.7
54°	1248.3	1272.7	1293.2	1301.4	1301.8	1280.8	1252.6	1221.0	1190.9	1163.1	1148.8
54.5°	1221.5	1246.4	1266.9	1275.0	1275.5	1255.9	1227.2	1194.7	1164.6	1136.8	1123.0
55°	1190.9	1215.3	1237.3	1245.9	1248.7	1227.7	1199.0	1166.0	1134.9	1107.7	1093.8
55.5°	1156.9	1181.3	1204.7	1213.4	1217.7	1197.1	1167.0	1133.5	1099.5	1071.3	1058.9
56°	1117.2	1145.0	1166.5	1175.6	1182.7	1162.7	1130.6	1094.3	1059.8	1032.6	1019.2
56.5°	1075.1	1103.8	1125.8	1135.9	1144.0	1124.4	1091.9	1053.6	1019.2	990.0	976.6
57°	1030.2	1058.4	1082.8	1093.3	1102.9	1081.4	1048.8	1011.0	975.2	946.0	931.7
57.5°	982.8	1009.6	1037.8	1050.3	1059.8	1036.9	1004.4	967.0	930.7	902.0	885.7
58°	933.6	960.8	991.4	1006.3	1015.8	990.0	956.5	920.2	885.3	855.6	839.4
58.5°	885.3	911.6	943.1	960.8	970.9	943.6	909.7	874.3	839.8	811.1	793.0
59°	834.1	862.8	895.3	914.4	923.0	892.9	859.9	825.5	792.5	764.3	745.1
59.5°	784.8	812.6	846.0	865.7	874.7	844.1	810.2	776.7	745.6	717.9	698.7
60°	734.1	764.3	796.8	817.8	826.4	794.9	760.4	727.0	699.2	672.4	653.8
60.5°	686.3	716.0	747.0	768.1	778.1	747.5	710.7	679.6	652.8	626.5	608.4
61°	638.0	668.6	697.3	718.4	727.9	699.2	662.4	630.4	606.0	582.5	564.4
61.5°	591.1	622.7	649.5	667.7	680.1	653.8	615.0	583.5	560.5	539.5	520.8
62°	545.7	575.8	602.6	618.4	632.7	606.0	569.1	537.1	516.0	497.4	479.7
62.5°	501.7	531.4	556.2	568.7	584.0	560.0	523.2	491.7	474.9	458.2	441.4
63°	459.1	487.4	510.8	521.3	537.6	515.1	483.0	451.0	433.8	419.0	402.7
63.5°	417.5	444.8	464.9	473.0	492.6	474.0	442.4	409.9	392.7	379.3	364.0
64°	377.3	402.7	421.8	428.0	450.0	432.3	401.7	368.7	351.5	340.0	325.7
64.5°	339.6	363.5	379.7	384.5	407.5	391.2	361.1	328.1	310.9	300.3	291.3
65°	304.7	325.2	339.1	343.4	364.4	349.6	320.9	292.2	275.0	265.9	259.7
65.5°	269.3	288.4	300.8	305.1	321.9	308.5	284.6	259.2	242.5	233.4	230.5
66°	233.4	253.0	263.5	267.8	282.7	270.7	251.6	229.1	211.4	203.7	203.3



TEST NUMBER: P776768

CATALOG NUMBER: HCDJBL54050CSD-HCD81TRMW-5000lm-4000K

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
67.5°	153.0	163.1	169.8	173.6	182.2	177.0	166.0	152.6	133.4	133.9	136.8
68°	135.3	144.4	152.1	155.4	155.4	150.7	142.0	133.0	115.3	117.7	120.0
68.5°	117.7	126.3	134.9	137.3	132.5	127.7	122.4	115.7	100.9	105.2	106.2
69°	100.4	108.1	117.7	119.6	113.3	109.0	106.7	101.4	90.4	94.7	94.7
69.5°	82.7	89.9	100.4	101.4	98.0	95.2	93.3	89.9	83.2	86.1	85.6
70°	78.4	81.3	83.2	83.2	86.6	85.1	83.7	81.8	78.9	79.4	79.9
70.5°	74.6	76.0	77.5	77.5	79.4	78.9	78.4	77.0	75.1	75.6	75.6
71°	70.3	72.2	73.7	73.7	75.1	75.1	74.6	73.2	71.3	71.7	72.2
71.5°	66.5	68.9	70.3	70.3	71.7	71.3	70.8	69.3	67.0	67.9	68.4
72°	62.7	65.0	66.5	66.5	67.9	67.9	67.4	66.0	63.6	64.6	65.0
72.5°	59.3	61.2	63.1	63.1	64.6	64.1	63.6	62.2	59.8	60.7	61.7
73°	55.5	57.9	59.3	59.8	61.2	60.7	60.3	58.8	56.4	57.4	58.3
73.5°	52.1	54.5	56.0	56.4	57.9	57.4	56.9	55.5	53.1	54.0	55.0
74°	49.3	51.2	53.1	53.1	54.5	54.0	54.0	52.1	49.7	50.7	51.7
74.5°	45.9	47.8	49.7	49.7	51.2	51.2	50.7	48.8	46.4	47.8	48.8
75°	43.0	45.0	46.9	46.9	48.3	47.8	47.8	45.9	43.5	44.5	45.9
75.5°	40.2	42.1	44.0	44.0	45.4	45.0	45.0	43.0	41.1	41.6	43.0
76°	37.3	39.2	41.1	41.1	42.6	42.6	42.1	40.2	38.3	39.2	40.7
76.5°	34.9	36.3	38.3	38.7	40.2	39.7	39.7	37.8	35.9	36.8	37.8
77°	32.5	34.0	35.9	36.3	37.3	37.3	36.8	35.4	33.0	34.0	35.4
77.5°	30.1	31.6	33.5	34.0	34.9	34.9	34.4	32.5	30.6	31.6	33.0
78°	27.7	29.2	31.1	31.6	32.5	32.5	32.0	30.1	28.2	29.2	30.1
78.5°	25.8	27.3	28.7	29.2	30.1	30.1	29.7	27.7	25.8	26.8	28.2
79°	23.9	24.9	26.8	27.3	27.7	27.7	27.3	25.3	23.9	24.4	25.8
79.5°	21.5	23.0	24.9	24.9	25.8	25.8	25.3	23.4	22.0	22.5	23.9
80°	20.1	21.0	22.5	23.0	23.9	23.9	23.4	21.5	20.1	20.6	22.0
80.5°	18.2	19.1	20.6	21.0	22.0	22.0	21.5	19.6	18.2	18.7	20.1
81°	16.3	17.2	19.1	19.6	20.1	20.1	19.6	17.7	16.3	16.7	18.2
81.5°	14.8	15.8	17.2	17.7	18.2	18.2	17.7	16.3	14.8	15.3	16.3
82°	13.4	14.3	15.8	15.8	16.7	16.7	16.3	14.3	13.4	13.4	14.8
82.5°	11.5	12.4	13.9	14.3	14.8	14.8	14.3	12.9	11.5	12.0	13.4
83°	10.0	11.0	12.4	12.9	13.4	13.4	12.9	11.5	10.0	10.5	12.0
83.5°	9.1	9.6	11.0	11.5	12.0	12.0	11.5	10.0	9.1	9.1	10.5
84°	7.7	8.1	9.6	10.0	10.5	10.5	10.0	8.6	7.7	8.1	9.1
84.5°	6.7	7.2	8.1	8.6	9.1	9.1	8.6	7.2	6.7	6.7	7.7
85°	5.7	6.2	7.2	7.7	8.1	8.1	7.7	6.2	5.7	5.7	6.7
85.5°	4.3	4.8	6.2	6.7	6.7	6.7	6.2	4.8	4.8	4.3	5.7
86°	3.8	3.8	5.3	5.3	5.7	5.7	5.3	3.8	3.8	3.3	4.8
86.5°	2.9	2.9	4.3	4.3	4.8	4.8	4.3	3.3	2.9	2.9	3.8
87°	1.9	2.4	3.3	3.8	3.8	3.8	3.3	2.4	1.9	1.9	2.9
87.5°	1.4	1.9	2.4	2.9	2.9	2.9	2.9	1.9	1.4	1.4	2.4
88°	1.0	1.4	1.9	1.9	2.4	2.4	1.9	1.4	1.0	1.0	1.4
88.5°	0.5	1.0	1.0	1.4	1.4	1.4	1.4	1.0	0.5	0.5	1.0



TEST NUMBER: P776768
CATALOG NUMBER: HCDJBL54050CSD-HCD81TRMW-5000lm-4000K

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: P776768

CATALOG NUMBER: HCDJBL54050CSD-HCD81TRMW-5000lm-4000K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
0°	2561.6	2561.6	2561.6	2561.6	2561.6	2561.6
0.5°	2560.6	2558.7	2559.7	2561.1	2562.5	2563.0
1°	2559.2	2557.3	2558.7	2560.6	2562.5	2563.0
1.5°	2557.8	2555.8	2557.3	2560.1	2562.5	2563.5
2°	2555.8	2554.4	2555.8	2559.2	2562.1	2563.0
2.5°	2553.9	2552.5	2554.4	2557.8	2561.1	2562.5
3°	2551.5	2550.1	2552.5	2556.3	2560.1	2562.5
3.5°	2549.1	2547.7	2550.6	2554.9	2559.2	2561.6
4°	2546.3	2545.3	2548.2	2553.0	2557.8	2561.1
4.5°	2543.4	2542.4	2545.8	2551.1	2556.3	2559.7
5°	2540.5	2539.1	2543.4	2548.7	2554.4	2558.7
5.5°	2536.7	2536.2	2540.5	2546.3	2552.5	2557.3
6°	2533.4	2532.9	2537.2	2543.9	2550.1	2555.4
6.5°	2530.0	2529.1	2533.8	2540.5	2547.7	2553.4
7°	2525.7	2525.2	2531.0	2537.7	2545.3	2551.1
7.5°	2521.9	2520.9	2527.1	2534.3	2542.4	2548.7
8°	2517.1	2516.6	2522.8	2530.5	2539.6	2546.3
8.5°	2512.8	2511.8	2518.5	2527.1	2535.8	2542.9
9°	2508.0	2507.1	2513.8	2522.8	2532.4	2540.1
9.5°	2502.8	2502.3	2509.4	2518.5	2528.6	2536.7
10°	2497.5	2497.0	2504.7	2514.2	2524.8	2533.4
10.5°	2491.8	2491.8	2499.4	2509.4	2520.4	2529.5
11°	2486.5	2486.0	2494.1	2504.7	2516.1	2525.7
11.5°	2480.3	2480.3	2488.4	2499.4	2511.8	2521.4
12°	2474.1	2474.1	2482.7	2494.1	2506.6	2517.1
12.5°	2467.8	2467.8	2476.9	2488.4	2501.8	2512.8
13°	2461.1	2461.1	2470.7	2482.7	2496.5	2507.5
13.5°	2454.0	2454.4	2464.0	2476.4	2490.8	2502.3
14°	2446.8	2446.8	2457.3	2470.2	2485.1	2497.0
14.5°	2439.6	2439.6	2450.6	2464.0	2478.8	2491.8
15°	2432.4	2432.4	2443.4	2457.3	2472.6	2486.0
15.5°	2424.3	2424.8	2435.3	2450.1	2466.4	2479.8
16°	2416.2	2416.7	2427.7	2443.0	2459.7	2473.6
16.5°	2408.1	2408.5	2420.0	2435.3	2452.5	2467.4
17°	2399.9	2400.4	2411.9	2427.7	2445.4	2460.2
17.5°	2390.4	2391.3	2403.8	2420.0	2438.2	2453.5
18°	2381.8	2382.7	2394.7	2411.9	2430.1	2446.3
18.5°	2372.7	2373.1	2386.1	2403.3	2422.4	2439.1
19°	2363.1	2364.1	2377.0	2394.7	2414.3	2431.0
19.5°	2353.5	2354.0	2367.4	2386.1	2406.1	2423.4
20°	2343.5	2344.4	2357.8	2377.0	2397.1	2415.2
20.5°	2333.0	2333.9	2348.3	2367.4	2388.4	2407.1
21°	2322.4	2323.4	2337.8	2357.8	2379.4	2398.0



TEST NUMBER: P776768

CATALOG NUMBER: HCDJBL54050CSD-HCD81TRMW-5000lm-4000K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
22.5°	2289.4	2290.9	2306.7	2327.2	2350.7	2370.8
23°	2278.4	2279.4	2295.2	2316.7	2340.6	2360.7
23.5°	2266.5	2267.9	2284.2	2306.2	2330.1	2351.1
24°	2254.5	2256.0	2272.7	2294.7	2319.6	2340.6
24.5°	2242.6	2244.0	2260.3	2283.7	2308.6	2330.1
25°	2230.1	2231.6	2248.3	2271.7	2297.6	2319.1
25.5°	2217.2	2219.1	2236.4	2260.3	2286.1	2308.6
26°	2204.8	2206.2	2223.9	2247.8	2274.6	2297.6
26.5°	2191.4	2193.3	2211.5	2235.9	2262.2	2286.1
27°	2178.0	2179.9	2198.1	2223.0	2250.2	2274.1
27.5°	2164.6	2166.1	2184.7	2210.1	2237.8	2262.2
28°	2150.7	2152.2	2171.3	2197.1	2225.4	2249.7
28.5°	2136.4	2138.3	2157.9	2183.7	2212.4	2237.3
29°	2122.1	2124.0	2143.1	2170.4	2199.1	2224.9
29.5°	2107.2	2109.6	2129.2	2156.5	2185.7	2211.5
30°	2091.9	2094.3	2114.9	2142.1	2172.3	2198.1
30.5°	2077.1	2079.5	2099.6	2127.8	2157.9	2185.2
31°	2062.3	2064.2	2085.2	2113.4	2143.6	2170.8
31.5°	2046.5	2048.9	2069.9	2098.6	2129.2	2157.0
32°	2030.7	2032.6	2054.1	2083.8	2114.9	2142.6
32.5°	2014.4	2016.8	2038.4	2068.0	2100.1	2127.8
33°	1998.7	2001.1	2023.1	2052.7	2085.2	2113.4
33.5°	1982.4	1984.3	2006.3	2037.4	2069.4	2098.1
34°	1965.7	1967.6	1990.1	2021.1	2053.7	2082.4
34.5°	1948.4	1951.3	1973.8	2004.9	2037.9	2067.1
35°	1931.7	1933.6	1957.1	1988.6	2021.6	2051.3
35.5°	1915.0	1917.4	1939.8	1971.9	2005.4	2035.0
36°	1897.7	1899.7	1923.1	1955.1	1988.6	2018.7
36.5°	1880.1	1882.9	1905.9	1938.4	1972.4	2002.0
37°	1862.8	1865.2	1888.2	1921.2	1955.1	1985.3
37.5°	1844.7	1847.1	1870.5	1903.5	1937.9	1968.5
38°	1827.0	1828.9	1852.3	1885.8	1920.2	1950.8
38.5°	1809.3	1811.2	1834.6	1868.1	1902.5	1933.6
39°	1790.6	1793.0	1816.4	1850.4	1884.8	1915.9
39.5°	1772.4	1774.4	1798.3	1831.7	1867.1	1897.7
40°	1754.3	1756.2	1779.6	1813.6	1849.0	1879.6
40.5°	1735.6	1737.5	1760.5	1794.9	1830.8	1861.4
41°	1717.4	1718.9	1742.3	1776.3	1811.7	1842.3
41.5°	1698.3	1699.3	1722.7	1757.1	1793.0	1823.1
42°	1679.7	1681.1	1704.1	1739.0	1774.4	1804.5
42.5°	1661.0	1661.5	1684.9	1719.8	1754.7	1785.4
43°	1641.4	1642.8	1666.3	1700.2	1735.6	1766.2
43.5°	1622.3	1623.2	1646.2	1680.6	1716.0	1746.6

TEST NUMBER: P776768

CATALOG NUMBER: HCDJBL54050CSD-HCD81TRMW-5000lm-4000K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
45°	1564.4	1564.9	1586.9	1621.3	1656.7	1686.4
45.5°	1544.8	1544.8	1566.8	1601.2	1635.7	1665.3
46°	1524.7	1524.2	1546.2	1580.7	1615.1	1644.7
46.5°	1504.6	1503.2	1525.7	1559.6	1594.1	1623.7
47°	1484.1	1483.1	1504.1	1538.1	1572.5	1601.7
47.5°	1462.5	1461.1	1481.7	1516.1	1550.5	1579.7
48°	1441.0	1439.1	1459.7	1493.6	1527.6	1557.7
48.5°	1419.0	1416.1	1437.2	1470.7	1504.6	1534.3
49°	1396.1	1393.2	1413.7	1446.7	1481.7	1511.3
49.5°	1372.6	1369.3	1389.4	1423.3	1457.3	1486.9
50°	1348.2	1343.9	1364.5	1397.5	1432.4	1461.6
50.5°	1323.4	1319.5	1339.1	1372.1	1406.1	1435.7
51°	1298.0	1293.7	1313.8	1346.8	1380.3	1410.4
51.5°	1272.2	1267.9	1287.0	1321.0	1354.0	1382.7
52°	1245.4	1242.0	1261.7	1294.2	1326.7	1355.4
52.5°	1219.6	1216.2	1235.8	1267.4	1298.0	1328.1
53°	1194.7	1191.8	1211.0	1242.0	1272.7	1300.9
53.5°	1170.3	1168.4	1187.5	1217.7	1247.3	1274.1
54°	1146.9	1144.5	1163.1	1193.7	1222.4	1248.3
54.5°	1120.6	1117.7	1136.8	1166.5	1195.2	1221.5
55°	1092.4	1087.1	1107.7	1137.3	1166.0	1190.9
55.5°	1058.9	1050.7	1071.3	1101.0	1130.1	1156.9
56°	1018.2	1010.6	1031.6	1060.8	1090.4	1117.2
56.5°	975.7	967.5	988.1	1018.7	1047.4	1075.1
57°	931.7	922.1	943.1	973.7	1003.9	1030.2
57.5°	885.7	874.7	897.7	928.3	957.5	982.8
58°	839.4	826.9	851.3	882.4	910.6	933.6
58.5°	791.0	780.0	804.4	836.0	859.4	885.3
59°	742.7	731.7	757.1	787.2	812.1	834.1
59.5°	695.4	686.3	710.7	740.4	763.3	784.8
60°	648.0	639.9	664.8	692.5	713.1	734.1
60.5°	602.1	594.5	618.9	644.7	662.9	686.3
61°	556.2	549.0	573.0	596.9	615.5	638.0
61.5°	513.7	507.4	529.0	551.4	569.1	591.1
62°	474.9	464.4	486.9	505.0	521.8	545.7
62.5°	436.7	424.2	444.8	460.6	477.8	501.7
63°	398.4	385.5	403.7	417.5	433.8	459.1
63.5°	360.1	348.2	364.9	376.4	392.7	417.5
64°	321.9	312.3	326.2	336.7	352.0	377.3
64.5°	289.8	279.8	290.3	299.9	315.7	339.6
65°	259.7	248.2	256.3	264.5	280.3	304.7
65.5°	231.5	220.0	224.3	232.0	247.3	269.3
66°	204.7	193.2	194.2	202.3	217.1	233.4



TEST NUMBER: P776768

CATALOG NUMBER: HCDJBL54050CSD-HCD81TRMW-5000lm-4000K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
67.5°	139.7	137.7	136.8	143.0	147.8	153.0
68°	122.0	122.0	121.5	126.3	130.6	135.3
68.5°	107.1	106.2	106.2	109.5	113.8	117.7
69°	95.2	90.4	90.9	92.8	96.6	100.4
69.5°	85.6	82.3	82.7	84.2	86.1	82.7
70°	79.4	77.5	78.0	78.9	79.4	78.4
70.5°	75.6	74.1	74.6	75.1	75.1	74.6
71°	72.2	70.3	70.8	71.7	71.7	70.3
71.5°	68.4	67.0	67.4	67.9	67.9	66.5
72°	65.0	63.1	63.6	64.6	64.1	62.7
72.5°	61.2	59.8	60.3	61.2	60.7	59.3
73°	57.9	56.4	56.9	57.4	56.9	55.5
73.5°	55.0	53.6	53.6	54.5	53.6	52.1
74°	51.7	50.2	50.7	51.2	50.7	49.3
74.5°	48.8	47.3	47.8	48.3	47.3	45.9
75°	45.9	44.5	45.0	45.0	44.5	43.0
75.5°	43.0	41.6	42.1	42.6	41.6	40.2
76°	40.7	39.2	39.2	39.7	38.7	37.3
76.5°	37.8	36.3	36.8	36.8	35.9	34.9
77°	35.4	34.0	34.4	34.4	33.5	32.5
77.5°	33.0	31.6	32.0	32.0	31.1	30.1
78°	30.6	29.7	29.7	30.1	28.7	27.7
78.5°	28.2	27.3	27.7	27.7	26.8	25.8
79°	26.3	25.3	25.3	25.8	24.4	23.9
79.5°	24.4	23.4	23.4	23.4	22.5	21.5
80°	22.5	21.5	21.5	21.5	20.6	20.1
80.5°	20.6	19.6	19.6	19.6	18.7	18.2
81°	18.7	18.2	18.2	18.2	17.2	16.3
81.5°	16.7	16.3	16.7	16.3	15.3	14.8
82°	15.3	14.8	14.8	14.8	13.9	13.4
82.5°	13.9	13.4	13.4	13.4	12.0	11.5
83°	12.4	11.5	12.0	11.5	10.5	10.0
83.5°	11.0	10.5	10.5	10.0	9.1	9.1
84°	9.6	9.1	9.1	9.1	8.1	7.7
84.5°	8.1	7.7	8.1	7.7	6.7	6.7
85°	7.2	6.7	6.7	6.7	5.7	5.7
85.5°	6.2	5.7	5.7	5.7	4.3	4.3
86°	4.8	4.8	4.8	4.8	3.8	3.8
86.5°	4.3	3.8	3.8	3.8	2.9	2.9
87°	3.3	2.9	2.9	2.9	2.4	1.9
87.5°	2.4	1.9	1.9	1.9	1.9	1.4
88°	1.4	1.4	1.4	1.4	1.0	1.0
88.5°	1.0	0.5	0.5	0.5	0.5	0.5



TEST NUMBER: P776768

CATALOG NUMBER: HCDJBL54050CSD-HCD81TRMW-5000lm-4000K

CANDELA DISTRIBUTION (continued):

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



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Cooper Lighting Solutions Photometric Lab
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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°	2388.9	2401.8	2407.6	2405.7	2400.4	2388.4	2371.2	2352.1	2334.4	2319.1	2311.4
22°	2379.8	2393.2	2398.5	2397.1	2391.8	2379.4	2361.7	2342.5	2324.4	2309.1	2300.4



44°	1726.5	1750.0	1762.9	1763.4	1759.5	1740.9	1712.2	1679.7	1646.7	1618.9	1605.5
44.5°	1706.4	1729.4	1742.8	1744.2	1740.9	1720.8	1692.6	1660.1	1627.5	1599.8	1585.9



66.5°	200.4	221.4	229.6	233.9	246.8	236.7	220.0	200.4	182.2	177.0	178.9
67°	170.7	190.8	198.0	201.8	213.8	205.7	191.3	175.5	155.4	153.5	156.4



89°	0.0	0.5	0.5	0.5	1.0	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°	2311.9	2313.4	2327.7	2348.3	2369.8	2388.9
22°	2300.9	2302.4	2317.2	2337.8	2360.2	2379.8



44°	1603.1	1604.1	1627.1	1661.5	1696.4	1726.5
44.5°	1584.0	1584.5	1607.0	1641.9	1676.8	1706.4



66.5°	180.8	169.8	167.9	176.0	190.8	200.4
67°	159.7	154.0	152.1	159.3	165.0	170.7

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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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Scaled Data Report



(END OF REPORT)