

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: P776667

Luminaire Tested: HCDJBS4050CSD-HCD61TRMW-5000lm-3500K

Issue Date: 2/13/2024

Test Information

Test Method: LM-79-2019
Report Number: P776667
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (A2312156B037)
Test Lab:
Issue Date: 2/13/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: HALO COMMERCIAL
Catalog Number: HCDJBS4050CSD-HCD61TRMW-5000lm-3500K
Description: 6 INCH ROUND SHALLOW-WIDE MATTE WHITE TRIM
Light Source: SELECTABLE LUMENS AND CCT ARRAY 90CRI / 3500K CCT
Ballast/Driver: -

Summary

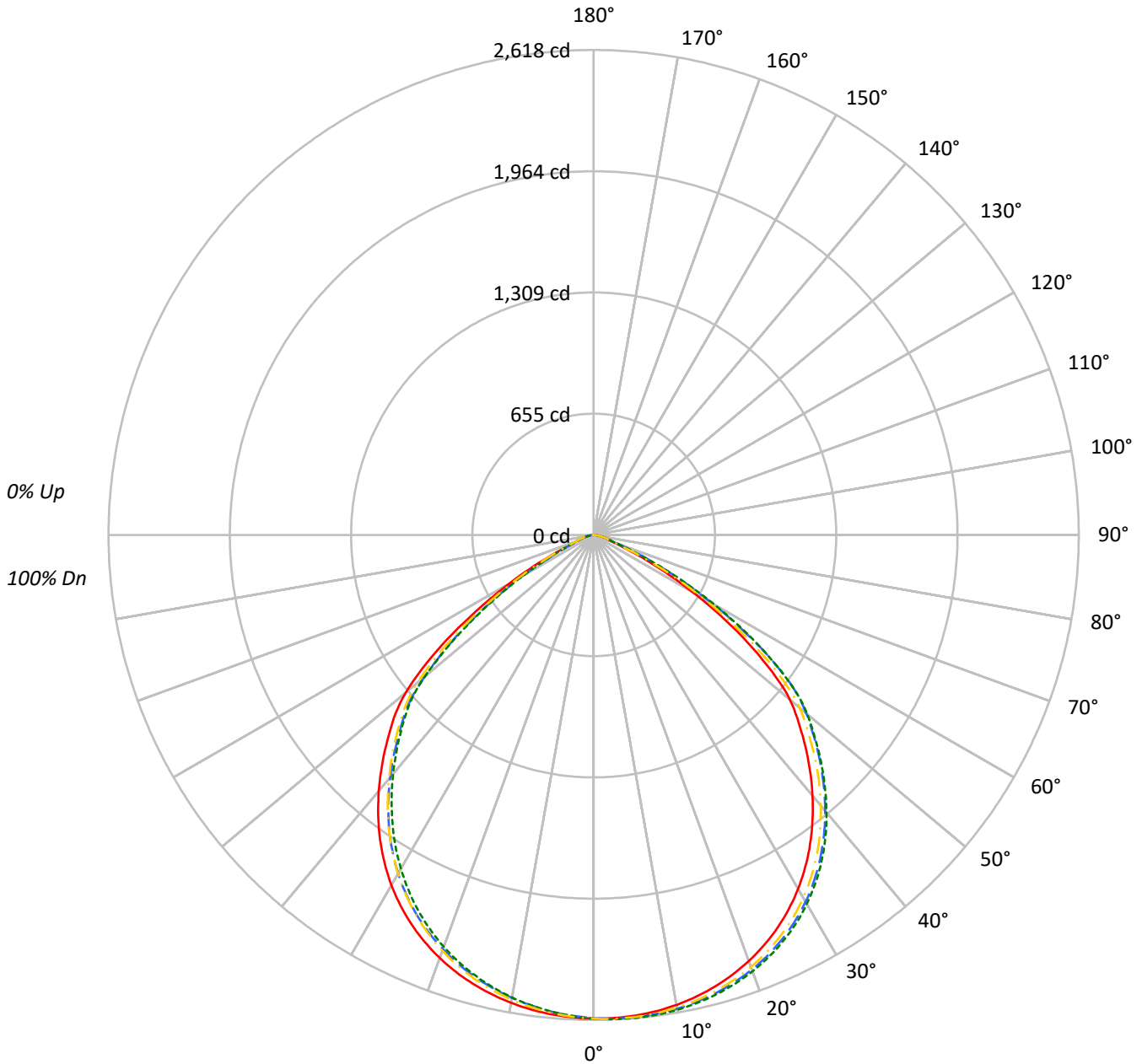
Lumens per Lamp: N/A
Luminaire Lumens: 5760.3 lumens
Efficiency: N/A
Efficacy: 120.0 lumens/watt
Spacing Criteria (0/90/45): 1.25 / 1.24 / 1.32
Luminous Opening: Circular (Dia: 0.5' x H: 0')
CIE Type: Direct

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	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	99	96	97	95	93	94	92	91	89								
2	103	96	91	86	100	94	89	85	91	87	83	88	84	81	85	82	79	77								
3	95	86	79	74	93	85	78	73	82	76	72	79	74	71	77	73	69	67								
4	88	77	70	64	86	76	69	63	74	67	63	71	66	62	69	65	61	59								
5	81	70	62	56	79	69	61	56	67	60	55	65	59	55	63	58	54	52								
6	75	63	55	49	74	62	55	49	61	54	49	59	53	48	58	52	48	46								
7	70	58	50	44	68	57	49	44	55	49	44	54	48	43	53	47	43	41								
8	65	53	45	40	64	52	45	39	51	44	39	50	44	39	49	43	39	37								
9	61	49	41	36	60	48	41	36	47	40	36	46	40	35	45	39	35	34								
10	57	45	38	33	56	44	37	33	44	37	32	43	37	32	42	36	32	30								

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°	270°
0°	143092	143092	143092	143092
5°	143303	144029	142989	142185
10°	143406	144904	142777	141124
15°	143293	145676	142436	139814
20°	142807	146249	141762	137994
25°	141710	146355	140482	135401
30°	139642	145611	138179	131729
35°	136302	143590	134469	126732
40°	131504	139876	129070	120497
45°	125277	134495	122245	113213
50°	117864	128405	112713	101447
55°	97191	111843	88542	75782
60°	67440	82274	57813	47726
65°	36528	48578	27591	24412
70°	17391	20645	15195	15115
75°	13979	15780	11586	12179
80°	10576	12944	7892	9218
85°	6542	10378	3271	5346

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 67.5°
 Vertical Angle: 45°
 Luminance: 138262 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	247.2	4.3
10°-20°	709.7	12.3
20°-30°	1072.6	18.6
30°-40°	1261.5	21.9
40°-50°	1228.4	21.3
50°-60°	866.5	15.0
60°-70°	290.3	5.0
70°-80°	70.1	1.2
80°-90°	13.9	0.2
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°	2029.5	35.2
0°-40°	3291.0	57.1
0°-60°	5385.9	93.5
0°-90°	5760.3	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	5760.3	100.0

CANDELA DISTRIBUTION:

	0°	90°	180°	270°	360°	Flux
0°	2610	2610	2610	2610	2610	
5°	2604	2617	2598	2584	2604	248
15°	2525	2567	2510	2464	2525	712
25°	2343	2420	2322	2238	2343	1078
35°	2037	2146	2009	1894	2037	1271
45°	1616	1735	1577	1460	1616	1245
55°	1017	1170	926	793	1017	901
65°	282	374	213	188	282	302
75°	66	74	55	58	66	71
85°	10	16	5	8	10	14
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°	2610.2	2610.2	2610.2	2610.2	2610.2	2610.2	2610.2	2610.2	2610.2	2610.2	2610.2
0.5°	2611.6	2611.1	2609.7	2607.4	2612.6	2613.0	2612.6	2612.6	2611.1	2609.3	2606.9
1°	2611.6	2611.6	2611.1	2609.3	2614.0	2614.0	2613.5	2612.6	2610.7	2608.3	2605.0
1.5°	2611.6	2612.1	2611.6	2610.7	2614.9	2614.9	2614.0	2612.1	2609.3	2606.4	2603.1
2°	2611.1	2612.1	2612.6	2612.1	2615.9	2615.4	2614.0	2611.6	2608.3	2605.0	2600.8
2.5°	2610.2	2612.1	2613.0	2613.0	2616.8	2615.4	2614.0	2611.1	2607.4	2603.1	2598.9
3°	2609.7	2612.1	2613.5	2614.0	2616.8	2615.9	2614.0	2610.2	2605.5	2601.2	2596.0
3.5°	2608.3	2612.1	2614.0	2614.9	2617.3	2615.9	2613.5	2609.3	2604.1	2598.9	2593.2
4°	2607.4	2611.1	2613.5	2615.4	2617.3	2615.9	2613.0	2608.3	2602.7	2596.5	2590.4
4.5°	2605.5	2610.2	2613.5	2615.9	2617.7	2615.4	2612.6	2606.4	2600.3	2593.7	2586.6
5°	2604.1	2609.3	2613.0	2615.9	2617.3	2614.9	2611.1	2605.0	2598.4	2590.9	2583.8
5.5°	2602.2	2608.3	2612.1	2615.4	2616.8	2614.0	2610.2	2603.1	2596.0	2588.0	2580.0
6°	2600.3	2606.4	2611.6	2615.4	2615.9	2613.0	2609.3	2601.2	2593.2	2584.7	2576.2
6.5°	2597.9	2605.0	2610.2	2614.9	2614.9	2612.1	2607.4	2598.9	2590.4	2581.0	2572.0
7°	2595.6	2603.1	2608.8	2614.0	2614.0	2610.2	2606.0	2596.5	2587.6	2577.7	2567.7
7.5°	2592.7	2601.2	2607.4	2613.0	2612.6	2608.8	2604.1	2593.7	2584.3	2573.9	2563.0
8°	2589.9	2598.9	2605.5	2612.1	2611.1	2606.9	2601.7	2590.9	2581.0	2569.6	2558.8
8.5°	2586.6	2596.5	2604.1	2611.1	2609.3	2605.0	2598.9	2588.0	2577.2	2565.4	2553.6
9°	2583.3	2593.7	2601.7	2609.3	2607.4	2602.7	2596.5	2584.7	2573.4	2560.7	2548.9
9.5°	2579.5	2590.9	2599.3	2607.4	2605.5	2600.3	2594.2	2581.4	2569.2	2556.0	2543.2
10°	2576.2	2587.6	2597.0	2605.5	2603.1	2597.5	2590.9	2577.2	2564.9	2551.2	2538.0
10.5°	2572.0	2584.3	2594.2	2603.6	2600.3	2594.2	2587.6	2573.4	2560.2	2546.1	2531.9
11°	2567.7	2580.5	2590.9	2600.8	2597.5	2591.3	2584.3	2569.2	2555.5	2540.9	2526.2
11.5°	2563.0	2576.7	2588.0	2598.4	2594.2	2587.6	2580.5	2564.9	2550.8	2535.2	2520.1
12°	2558.3	2572.5	2584.3	2595.6	2590.9	2584.3	2576.7	2560.2	2545.6	2529.5	2514.0
12.5°	2553.1	2568.2	2580.5	2592.3	2587.6	2580.5	2572.5	2555.5	2539.9	2523.4	2507.4
13°	2547.9	2563.5	2576.7	2589.0	2583.8	2576.7	2568.2	2550.3	2534.3	2517.3	2500.3
13.5°	2542.3	2559.3	2572.5	2585.7	2580.0	2572.0	2563.5	2545.1	2528.6	2510.7	2493.2
14°	2536.6	2554.1	2568.2	2581.9	2575.8	2567.7	2558.8	2539.4	2522.5	2504.1	2486.1
14.5°	2531.0	2548.9	2563.5	2578.1	2571.0	2563.0	2553.6	2533.8	2515.9	2497.0	2478.1
15°	2524.8	2543.2	2558.8	2573.4	2566.8	2558.3	2548.4	2527.7	2509.7	2490.4	2470.6
15.5°	2518.2	2537.6	2553.6	2569.2	2562.1	2552.7	2542.7	2521.5	2502.7	2482.8	2462.6
16°	2511.6	2531.4	2548.4	2564.4	2556.9	2547.5	2536.6	2514.9	2496.1	2475.3	2454.5
16.5°	2504.5	2525.3	2542.3	2560.2	2551.2	2541.8	2531.0	2508.3	2488.5	2467.3	2446.1
17°	2497.0	2518.7	2537.1	2554.5	2546.1	2535.7	2524.8	2501.2	2481.0	2459.3	2437.1
17.5°	2489.5	2512.1	2531.0	2549.4	2539.9	2529.5	2518.2	2493.7	2472.9	2450.8	2428.1
18°	2481.9	2505.0	2524.8	2543.7	2533.8	2523.4	2511.1	2486.1	2464.9	2442.3	2419.2
18.5°	2473.9	2497.9	2518.2	2537.6	2527.2	2516.3	2504.1	2478.6	2456.9	2433.3	2409.3
19°	2465.4	2490.4	2511.1	2531.4	2521.1	2509.7	2497.0	2470.6	2447.9	2424.4	2399.8
19.5°	2456.9	2482.4	2504.1	2525.3	2514.0	2502.2	2489.5	2462.1	2439.0	2414.9	2389.9
20°	2447.9	2474.4	2496.5	2518.7	2506.9	2494.6	2481.9	2453.6	2430.0	2405.0	2379.6
20.5°	2439.0	2466.3	2489.5	2511.6	2499.4	2486.6	2473.4	2444.6	2420.6	2395.1	2368.7
21°	2429.5	2457.4	2481.4	2504.5	2491.8	2478.6	2464.9	2435.2	2411.2	2385.2	2358.3

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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°	2398.9	2430.0	2456.0	2481.9	2466.8	2452.7	2438.0	2406.4	2380.0	2352.7	2324.4
23°	2388.5	2420.6	2447.0	2473.4	2457.8	2443.7	2428.6	2396.1	2368.7	2341.3	2311.6
23.5°	2377.7	2410.2	2437.6	2464.9	2448.9	2434.3	2418.7	2385.2	2357.9	2329.6	2299.8
24°	2366.3	2399.8	2427.7	2456.4	2439.5	2424.4	2408.3	2374.4	2346.1	2317.8	2287.1
24.5°	2355.0	2389.0	2417.8	2447.0	2429.5	2414.0	2397.9	2363.0	2334.3	2305.0	2274.4
25°	2342.8	2377.7	2407.4	2437.6	2419.6	2403.6	2387.6	2351.7	2322.5	2292.8	2261.2
25.5°	2330.5	2366.3	2397.0	2427.7	2409.3	2392.8	2376.3	2339.5	2309.7	2280.0	2247.0
26°	2317.8	2354.6	2385.7	2417.8	2398.4	2381.9	2364.9	2327.2	2297.0	2266.8	2233.3
26.5°	2305.5	2342.8	2374.8	2407.4	2387.6	2370.1	2353.6	2314.9	2283.8	2252.7	2219.2
27°	2291.8	2330.0	2363.0	2396.5	2376.3	2358.8	2341.3	2301.7	2270.6	2239.5	2204.6
27.5°	2278.6	2317.8	2351.3	2385.7	2364.5	2346.5	2328.6	2288.5	2256.9	2225.3	2189.9
28°	2264.5	2305.0	2339.5	2374.4	2352.2	2333.8	2316.3	2275.3	2242.8	2210.2	2174.4
28.5°	2250.8	2291.4	2326.7	2363.0	2339.9	2321.1	2303.1	2261.6	2228.1	2195.6	2159.3
29°	2236.2	2277.7	2314.0	2350.8	2327.2	2307.9	2289.5	2247.5	2213.5	2180.0	2143.2
29.5°	2221.1	2264.0	2300.3	2338.5	2314.0	2294.2	2275.8	2232.9	2198.0	2164.5	2127.2
30°	2206.0	2249.4	2287.1	2325.8	2300.3	2281.0	2262.1	2217.8	2182.9	2148.4	2110.2
30.5°	2190.9	2234.8	2273.4	2312.6	2286.6	2266.4	2247.0	2202.7	2166.8	2131.9	2093.3
31°	2174.9	2220.1	2258.8	2299.8	2272.5	2251.7	2232.4	2187.1	2150.8	2115.4	2076.3
31.5°	2158.8	2204.6	2244.2	2285.7	2257.9	2236.6	2217.8	2171.1	2134.3	2098.4	2058.3
32°	2142.3	2188.5	2229.1	2271.5	2243.2	2221.5	2201.7	2154.6	2117.3	2081.0	2040.4
32.5°	2125.3	2173.0	2214.0	2256.9	2227.7	2206.0	2185.7	2138.1	2100.3	2063.1	2021.6
33°	2108.3	2156.5	2198.0	2242.3	2212.1	2189.5	2169.7	2121.6	2082.9	2045.1	2003.2
33.5°	2090.9	2139.5	2181.9	2226.7	2196.1	2173.0	2153.2	2104.1	2064.5	2026.3	1984.8
34°	2073.0	2123.0	2165.9	2211.6	2180.0	2156.5	2136.2	2086.2	2046.1	2007.4	1965.0
34.5°	2055.5	2105.5	2148.9	2195.6	2163.1	2139.5	2118.7	2068.3	2027.7	1988.5	1945.6
35°	2036.7	2088.1	2131.9	2179.1	2145.6	2122.0	2101.3	2050.3	2009.3	1969.2	1925.3
35.5°	2018.3	2069.7	2114.5	2162.6	2128.2	2104.6	2082.9	2031.5	1990.0	1948.9	1905.1
36°	1998.4	2051.3	2096.6	2145.6	2110.7	2085.7	2065.0	2012.6	1970.1	1929.1	1883.8
36.5°	1979.6	2032.9	2078.6	2128.2	2092.3	2066.8	2046.1	1993.3	1949.9	1908.4	1863.1
37°	1960.7	2014.0	2059.8	2110.7	2073.4	2048.0	2026.7	1973.9	1930.1	1887.6	1841.9
37.5°	1940.4	1995.1	2041.8	2092.3	2054.1	2028.6	2007.4	1953.6	1909.8	1866.9	1820.6
38°	1920.2	1975.3	2022.5	2073.9	2035.2	2009.3	1988.1	1933.4	1889.5	1845.6	1798.5
38.5°	1899.9	1955.5	2003.2	2055.0	2015.0	1989.5	1967.8	1913.1	1867.8	1823.9	1775.8
39°	1879.1	1935.2	1983.4	2036.2	1995.6	1968.7	1947.5	1891.9	1846.6	1801.8	1753.7
39.5°	1858.8	1915.0	1963.5	2016.4	1974.9	1948.5	1926.8	1870.6	1825.3	1779.1	1731.0
40°	1837.6	1894.7	1943.3	1996.6	1954.6	1927.7	1906.0	1849.9	1803.6	1757.0	1707.9
40.5°	1815.9	1873.5	1923.0	1976.3	1933.4	1906.5	1884.8	1828.2	1782.0	1734.3	1685.7
41°	1794.7	1852.2	1901.8	1956.0	1912.6	1884.8	1863.6	1806.5	1759.3	1711.2	1661.7
41.5°	1773.0	1831.0	1880.5	1934.8	1891.4	1863.6	1841.4	1783.8	1737.1	1688.6	1638.6
42°	1750.8	1809.8	1859.3	1914.0	1869.7	1841.9	1819.7	1761.7	1714.5	1665.5	1615.0
42.5°	1728.7	1788.1	1838.1	1892.8	1847.5	1819.7	1798.5	1739.5	1691.9	1642.3	1591.4
43°	1706.5	1765.9	1815.9	1871.6	1825.3	1797.5	1775.8	1716.9	1669.2	1618.3	1566.9
43.5°	1684.3	1743.7	1794.2	1849.4	1803.2	1775.3	1752.7	1694.2	1646.1	1594.7	1543.3



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
45°	1615.9	1676.3	1727.2	1783.4	1734.8	1706.5	1684.3	1624.4	1576.8	1524.4	1473.5
45.5°	1592.8	1653.2	1705.1	1760.7	1711.7	1683.4	1661.2	1601.3	1553.7	1501.8	1450.8
46°	1569.7	1630.1	1682.0	1738.1	1689.0	1659.8	1637.6	1578.2	1530.1	1478.7	1428.7
46.5°	1546.1	1607.0	1658.8	1715.0	1665.5	1636.7	1614.0	1554.6	1507.0	1455.6	1406.0
47°	1523.5	1584.3	1635.7	1691.9	1641.9	1614.0	1591.4	1532.0	1484.8	1433.4	1382.0
47.5°	1500.8	1561.2	1613.1	1668.8	1619.2	1591.4	1568.8	1509.3	1462.2	1409.3	1356.5
48°	1478.2	1538.1	1589.5	1645.2	1597.1	1568.3	1546.1	1486.7	1437.6	1383.4	1328.7
48.5°	1454.6	1515.5	1566.9	1622.5	1573.9	1546.6	1523.0	1462.6	1411.7	1355.1	1297.1
49°	1432.4	1492.8	1543.8	1599.4	1551.3	1523.0	1500.4	1435.8	1384.3	1324.0	1263.6
49.5°	1407.5	1469.2	1521.6	1575.8	1528.7	1500.4	1476.3	1408.4	1354.2	1290.5	1227.3
50°	1382.0	1445.7	1498.5	1553.2	1505.6	1474.9	1449.9	1379.2	1321.6	1255.1	1191.0
50.5°	1354.2	1419.7	1474.4	1530.6	1480.1	1448.5	1422.5	1348.0	1287.6	1220.2	1154.6
51°	1322.6	1391.9	1448.5	1507.4	1453.2	1419.2	1392.8	1314.5	1252.7	1182.9	1116.4
51.5°	1287.2	1360.8	1420.7	1482.9	1424.9	1385.8	1359.8	1278.2	1214.5	1145.2	1078.2
52°	1251.3	1327.7	1391.4	1456.5	1392.8	1351.8	1324.4	1239.5	1175.4	1106.5	1039.1
52.5°	1214.1	1292.4	1358.9	1428.7	1357.9	1317.4	1289.5	1199.9	1135.8	1067.4	1000.4
53°	1175.9	1255.1	1324.9	1399.0	1323.0	1280.6	1251.3	1159.4	1095.2	1026.3	961.3
53.5°	1136.2	1216.4	1288.1	1366.9	1285.8	1243.3	1213.1	1117.4	1054.2	985.8	922.1
54°	1097.1	1178.2	1249.4	1332.0	1248.0	1205.6	1173.5	1075.9	1011.7	945.7	883.4
54.5°	1057.0	1138.1	1208.4	1294.7	1208.9	1167.8	1133.4	1034.8	969.7	905.1	843.8
55°	1016.9	1097.6	1167.4	1255.1	1170.2	1128.7	1091.9	991.4	926.4	863.1	803.7
55.5°	976.3	1055.1	1125.4	1214.5	1130.1	1088.6	1050.9	949.9	883.9	822.6	765.0
56°	936.7	1013.1	1082.5	1172.6	1089.5	1047.6	1009.4	907.5	841.0	782.0	725.9
56.5°	895.2	970.7	1038.6	1130.1	1048.0	1006.1	967.4	866.9	799.0	741.5	687.2
57°	855.1	927.3	994.3	1087.2	1006.1	964.6	924.9	825.9	758.0	701.8	649.5
57.5°	814.6	884.8	951.3	1043.8	963.1	923.0	883.4	785.8	717.4	662.2	612.7
58°	773.5	841.5	908.4	1001.3	921.2	880.6	841.9	745.2	677.3	623.1	575.9
58.5°	733.4	798.1	864.6	958.4	878.2	837.2	800.9	705.1	637.7	585.3	539.6
59°	693.8	756.6	821.6	916.0	835.3	794.3	759.4	665.0	600.0	547.1	504.7
59.5°	654.7	715.0	780.1	874.5	792.9	751.4	718.8	627.3	563.2	510.8	471.2
60°	615.1	674.0	739.6	832.5	750.4	709.4	678.7	588.6	527.3	475.0	439.1
60.5°	576.4	634.4	699.0	791.5	708.9	667.4	639.1	551.8	492.4	443.4	407.0
61°	540.1	595.2	657.5	749.9	668.4	626.4	600.4	514.6	458.0	411.8	375.0
61.5°	502.8	557.0	618.8	711.3	628.7	586.3	562.2	479.7	425.9	380.6	342.9
62°	467.9	519.8	581.1	670.2	589.1	546.7	524.0	447.1	393.8	349.0	310.8
62.5°	433.9	483.9	544.3	631.6	550.0	507.5	486.8	414.1	361.3	317.4	283.5
63°	401.4	449.5	508.0	593.4	512.2	470.7	453.3	381.6	329.2	290.5	257.5
63.5°	369.3	415.5	472.1	555.6	475.4	436.3	419.3	349.0	296.7	265.5	233.5
64°	339.1	383.5	438.2	518.4	441.5	402.3	385.4	316.5	267.0	241.5	211.3
64.5°	309.9	352.3	405.2	481.6	408.0	367.9	351.9	287.2	238.7	218.9	191.0
65°	281.6	323.1	373.6	446.7	374.5	333.9	317.9	259.9	212.7	198.1	173.1
65.5°	254.7	294.8	343.4	412.7	340.5	303.8	287.2	233.9	188.2	178.8	157.1
66°	229.2	269.3	314.1	379.2	307.1	274.5	258.9	209.9	167.4	162.3	143.9



TEST NUMBER: P776667

CATALOG NUMBER: HCDJBL54050CSD-HCD61TRMW-5000lm-3500K

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
67.5°	165.6	200.0	233.9	286.3	225.0	199.5	185.8	150.5	121.7	122.6	114.6
68°	152.8	180.2	210.4	258.9	200.5	178.3	166.5	135.8	113.2	113.7	108.0
68.5°	140.6	164.1	188.7	232.5	179.7	159.0	149.5	123.6	108.0	106.1	103.3
69°	127.8	151.4	169.8	208.5	159.9	142.4	135.4	113.7	103.8	100.9	99.0
69.5°	115.1	139.1	157.1	185.8	143.4	128.3	123.1	106.6	99.5	96.7	95.3
70°	108.5	126.4	144.3	165.1	128.8	117.4	113.7	101.4	94.8	92.4	91.0
70.5°	103.8	114.1	132.1	151.9	117.9	108.5	106.6	97.2	90.6	88.2	87.3
71°	99.5	106.1	119.8	138.2	109.0	103.3	101.9	92.9	85.8	84.4	83.5
71.5°	95.3	100.5	107.1	125.0	102.8	99.0	97.6	88.7	81.6	80.2	79.2
72°	91.0	96.2	101.9	111.8	98.6	94.8	93.9	84.4	77.4	75.9	75.5
72.5°	86.3	92.0	98.1	104.7	94.3	90.6	89.6	80.2	73.1	72.2	71.7
73°	82.1	87.7	93.9	100.5	90.6	86.8	85.4	75.9	69.3	68.4	67.9
73.5°	77.8	83.5	89.6	96.2	86.3	82.5	81.6	72.2	65.6	64.6	64.6
74°	74.1	79.2	85.4	92.4	82.1	78.8	77.4	67.9	61.8	60.8	60.8
74.5°	69.8	75.5	81.6	88.2	78.3	74.5	73.6	64.1	58.0	57.1	57.5
75°	66.0	71.2	77.4	84.0	74.5	70.7	69.8	60.4	54.7	53.8	54.2
75.5°	62.3	67.4	73.6	80.2	70.7	67.0	66.0	57.1	51.4	50.5	50.9
76°	58.5	63.7	69.3	75.9	67.0	63.7	62.3	53.3	48.1	47.2	48.1
76.5°	55.2	59.9	66.0	72.2	63.2	59.9	59.0	50.0	44.8	43.9	44.8
77°	51.4	56.6	62.3	68.4	59.9	56.6	55.7	46.7	41.5	41.0	42.0
77.5°	48.1	52.8	58.5	64.6	56.6	53.3	52.4	43.4	38.7	38.2	39.1
78°	45.3	49.5	55.2	61.3	53.3	50.0	49.1	40.6	35.8	35.4	36.3
78.5°	42.0	46.2	51.9	57.5	50.0	47.2	45.8	37.7	33.0	32.1	33.5
79°	39.1	43.4	48.6	54.2	46.7	43.9	42.9	34.9	30.2	29.2	31.1
79.5°	36.3	40.1	45.3	51.4	43.9	41.5	40.1	32.1	27.4	26.9	28.3
80°	33.5	37.3	42.4	48.1	41.0	38.7	37.3	29.2	25.0	24.1	25.5
80.5°	30.7	34.4	39.6	44.8	38.2	35.8	34.4	26.4	22.6	21.7	23.1
81°	28.3	31.6	36.8	42.0	35.4	33.0	31.6	24.1	20.3	19.3	21.2
81.5°	25.9	29.2	34.0	39.1	32.5	30.7	28.8	21.2	17.9	17.0	18.9
82°	23.1	26.4	31.1	36.3	29.7	27.8	26.4	19.3	16.0	14.6	16.5
82.5°	20.8	24.1	28.8	34.0	27.4	25.5	24.1	17.0	13.7	12.7	14.6
83°	18.9	21.7	26.4	31.1	25.0	23.1	21.7	14.6	11.8	10.8	12.7
83.5°	16.5	19.8	24.1	28.8	23.1	20.8	19.3	12.7	9.9	9.0	10.8
84°	14.6	17.5	21.7	26.4	20.8	18.9	17.5	10.8	8.0	7.1	9.0
84.5°	12.7	15.6	19.3	24.1	18.4	16.5	15.1	9.0	6.6	5.7	7.5
85°	10.4	13.2	17.5	21.7	16.5	14.6	13.2	7.5	5.2	4.7	6.1
85.5°	8.5	11.3	15.1	19.3	14.6	12.7	11.3	6.1	3.8	3.8	4.7
86°	7.1	9.4	13.2	17.5	12.7	10.8	9.9	5.2	3.3	2.8	3.3
86.5°	5.2	7.5	11.8	15.6	10.8	9.0	8.0	3.8	2.4	1.9	1.9
87°	4.2	6.1	9.9	13.7	9.0	7.5	6.6	2.8	1.4	0.9	0.9
87.5°	3.3	5.2	8.5	11.8	7.1	5.7	5.2	1.9	0.9	0.5	0.0
88°	2.4	4.2	6.6	9.9	5.7	4.2	3.8	0.9	0.5	0.0	0.0
88.5°	1.4	2.8	5.2	8.0	4.2	2.8	2.4	0.5	0.0	0.0	0.0



TEST NUMBER: P776667
CATALOG NUMBER: HCDJBL54050CSD-HCD61TRMW-5000lm-3500K

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
90°	0.0	0.5	1.4	3.3	0.5	0.0	0.0	0.0	0.0	0.0	0.0



TEST NUMBER: P776667

CATALOG NUMBER: HCDJBL54050CSD-HCD61TRMW-5000lm-3500K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
0°	2610.2	2610.2	2610.2	2610.2	2610.2	2610.2
0.5°	2603.6	2609.3	2610.2	2610.2	2611.6	2611.6
1°	2601.2	2607.4	2608.3	2608.8	2611.1	2611.6
1.5°	2598.4	2605.0	2606.4	2607.4	2610.2	2611.6
2°	2595.6	2602.7	2604.5	2605.5	2609.3	2611.1
2.5°	2592.7	2599.8	2602.2	2603.6	2607.8	2610.2
3°	2589.4	2597.0	2599.8	2601.7	2606.4	2609.7
3.5°	2586.1	2594.2	2597.0	2598.9	2605.0	2608.3
4°	2582.8	2590.9	2594.2	2596.5	2602.7	2607.4
4.5°	2579.1	2587.6	2590.9	2593.7	2600.8	2605.5
5°	2574.8	2583.8	2587.1	2590.4	2598.4	2604.1
5.5°	2570.6	2580.0	2583.8	2587.1	2596.0	2602.2
6°	2565.9	2575.8	2580.0	2583.8	2593.2	2600.3
6.5°	2561.1	2571.5	2576.2	2580.0	2590.4	2597.9
7°	2556.4	2566.8	2572.0	2576.2	2587.1	2595.6
7.5°	2551.2	2562.1	2567.3	2572.0	2583.8	2592.7
8°	2546.1	2557.4	2562.6	2567.7	2580.5	2589.9
8.5°	2540.4	2552.2	2557.8	2563.0	2576.7	2586.6
9°	2534.7	2547.0	2552.7	2558.3	2572.5	2583.3
9.5°	2529.1	2541.3	2547.5	2553.1	2568.2	2579.5
10°	2522.5	2535.2	2541.8	2547.9	2563.5	2576.2
10.5°	2516.3	2529.5	2536.1	2542.3	2558.8	2572.0
11°	2509.3	2522.9	2530.0	2536.6	2553.6	2567.7
11.5°	2502.7	2516.3	2523.4	2530.5	2548.9	2563.0
12°	2495.6	2509.7	2516.8	2524.4	2543.7	2558.3
12.5°	2488.0	2502.7	2510.2	2517.8	2537.6	2553.1
13°	2480.0	2495.1	2503.1	2511.1	2531.9	2547.9
13.5°	2472.5	2487.6	2495.6	2504.1	2525.3	2542.3
14°	2464.5	2480.0	2488.0	2497.0	2518.7	2536.6
14.5°	2456.0	2472.0	2480.0	2489.0	2512.1	2531.0
15°	2447.5	2463.5	2472.5	2481.9	2505.5	2524.8
15.5°	2438.5	2455.0	2464.0	2473.4	2497.9	2518.2
16°	2429.5	2446.1	2455.5	2464.9	2490.4	2511.6
16.5°	2420.1	2437.1	2446.1	2456.4	2482.4	2504.5
17°	2410.2	2427.7	2437.1	2447.5	2474.4	2497.0
17.5°	2400.8	2417.8	2427.7	2438.5	2466.3	2489.5
18°	2390.4	2408.3	2417.8	2429.1	2457.8	2481.9
18.5°	2380.0	2397.5	2407.9	2419.2	2448.9	2473.9
19°	2369.2	2387.6	2397.5	2409.3	2439.5	2465.4
19.5°	2357.9	2376.7	2387.1	2398.9	2430.0	2456.9
20°	2346.5	2365.4	2376.3	2388.5	2420.6	2447.9
20.5°	2335.2	2354.6	2364.5	2377.7	2410.7	2439.0
21°	2323.4	2342.3	2353.1	2366.3	2400.3	2429.5

TEST NUMBER: P776667

CATALOG NUMBER: HCDJBL54050CSD-HCD61TRMW-5000lm-3500K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
22.5°	2285.7	2305.5	2317.3	2331.0	2367.8	2398.9
23°	2273.0	2293.2	2304.1	2318.2	2356.4	2388.5
23.5°	2259.3	2280.0	2291.4	2305.5	2344.6	2377.7
24°	2245.6	2266.4	2278.1	2292.3	2332.9	2366.3
24.5°	2231.9	2252.7	2264.5	2279.1	2320.6	2355.0
25°	2217.3	2238.5	2250.3	2265.9	2307.4	2342.8
25.5°	2202.7	2224.4	2235.7	2251.7	2294.2	2330.5
26°	2188.1	2209.3	2221.5	2237.6	2281.0	2317.8
26.5°	2172.5	2194.7	2206.5	2222.5	2267.3	2305.5
27°	2156.9	2179.1	2191.4	2207.4	2253.1	2291.8
27.5°	2141.4	2163.5	2175.3	2192.8	2239.0	2278.6
28°	2125.3	2147.5	2159.8	2177.2	2224.4	2264.5
28.5°	2108.3	2131.0	2143.7	2161.2	2209.3	2250.8
29°	2091.4	2114.5	2126.7	2144.7	2194.2	2236.2
29.5°	2074.4	2097.5	2110.2	2128.6	2178.2	2221.1
30°	2056.5	2081.0	2092.8	2111.2	2162.1	2206.0
30.5°	2039.0	2063.1	2075.3	2094.7	2146.1	2190.9
31°	2020.6	2045.1	2057.9	2076.7	2129.6	2174.9
31.5°	2001.7	2027.7	2040.4	2059.3	2112.6	2158.8
32°	1982.9	2009.3	2022.0	2040.9	2095.1	2142.3
32.5°	1964.0	1990.4	2003.2	2023.0	2077.7	2125.3
33°	1944.2	1972.0	1985.2	2004.6	2059.8	2108.3
33.5°	1924.4	1953.2	1966.4	1985.7	2041.4	2090.9
34°	1904.6	1933.4	1947.0	1966.4	2023.0	2073.0
34.5°	1883.8	1913.5	1927.2	1947.5	2004.1	2055.5
35°	1863.6	1893.7	1907.9	1927.2	1985.2	2036.7
35.5°	1842.3	1873.5	1888.1	1907.4	1965.9	2018.3
36°	1821.6	1853.2	1867.8	1887.1	1946.1	1998.4
36.5°	1799.9	1832.9	1848.0	1866.9	1926.3	1979.6
37°	1778.7	1812.1	1827.2	1846.6	1905.5	1960.7
37.5°	1756.5	1790.9	1806.5	1825.8	1885.7	1940.4
38°	1734.8	1769.7	1785.7	1804.6	1865.0	1920.2
38.5°	1711.7	1748.9	1764.5	1782.9	1844.2	1899.9
39°	1690.0	1726.8	1743.7	1762.1	1822.5	1879.1
39.5°	1666.9	1705.1	1722.5	1740.9	1801.3	1858.8
40°	1644.2	1683.8	1700.8	1719.2	1780.1	1837.6
40.5°	1621.6	1662.1	1679.1	1697.1	1758.4	1815.9
41°	1598.5	1639.5	1657.0	1675.4	1736.7	1794.7
41.5°	1574.9	1617.3	1635.3	1653.2	1714.0	1773.0
42°	1551.8	1595.2	1613.1	1631.0	1692.3	1750.8
42.5°	1528.2	1573.0	1590.9	1608.9	1669.7	1728.7
43°	1505.6	1550.8	1568.8	1586.7	1647.5	1706.5
43.5°	1482.0	1527.7	1546.6	1563.6	1624.9	1684.3



TEST NUMBER: P776667

CATALOG NUMBER: HCDJBL54050CSD-HCD61TRMW-5000lm-3500K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
45°	1415.5	1460.3	1479.1	1495.7	1556.5	1615.9
45.5°	1393.3	1438.1	1456.5	1473.0	1532.9	1592.8
46°	1369.7	1415.5	1434.3	1450.8	1510.3	1569.7
46.5°	1345.2	1393.3	1411.7	1427.7	1487.2	1546.1
47°	1318.8	1370.7	1390.0	1405.6	1465.0	1523.5
47.5°	1288.6	1345.7	1366.9	1382.9	1442.4	1500.8
48°	1255.6	1320.7	1341.9	1358.4	1419.7	1478.2
48.5°	1219.7	1292.4	1315.9	1332.9	1396.6	1454.6
49°	1182.9	1260.8	1289.5	1307.0	1372.1	1432.4
49.5°	1145.7	1226.3	1257.0	1276.8	1347.1	1407.5
50°	1108.4	1189.5	1223.0	1243.3	1319.7	1382.0
50.5°	1069.3	1151.3	1184.8	1206.5	1288.6	1354.2
51°	1030.1	1113.1	1147.1	1168.8	1253.7	1322.6
51.5°	991.0	1073.5	1107.0	1130.1	1216.4	1287.2
52°	951.3	1034.4	1068.3	1090.5	1178.7	1251.3
52.5°	912.7	993.8	1028.7	1050.4	1140.5	1214.1
53°	873.1	952.3	987.7	1010.3	1102.3	1175.9
53.5°	834.8	912.2	945.2	968.8	1062.7	1136.2
54°	796.2	871.6	905.1	928.2	1023.0	1097.1
54.5°	757.5	833.0	864.1	887.7	983.0	1057.0
55°	719.8	792.9	822.6	849.0	942.4	1016.9
55.5°	682.0	753.7	783.0	808.9	902.3	976.3
56°	645.7	715.5	743.3	769.8	862.2	936.7
56.5°	610.8	677.3	704.2	731.6	822.6	895.2
57°	574.5	640.1	666.0	694.3	783.0	855.1
57.5°	539.6	603.7	628.3	655.6	744.3	814.6
58°	504.7	567.4	591.5	618.8	705.6	773.5
58.5°	472.6	533.0	557.0	583.9	667.4	733.4
59°	441.0	499.5	523.1	548.5	631.1	693.8
59.5°	409.9	466.5	490.5	514.6	594.8	654.7
60°	378.3	435.3	458.5	481.6	559.4	615.1
60.5°	347.1	403.7	427.8	449.0	525.0	576.4
61°	315.5	374.0	398.1	417.9	490.1	540.1
61.5°	288.2	346.2	370.3	387.2	456.6	502.8
62°	261.8	319.8	342.9	358.9	424.0	467.9
62.5°	237.7	293.8	317.0	331.1	392.4	433.9
63°	215.1	269.8	292.4	304.2	361.8	401.4
63.5°	195.3	247.2	269.3	279.7	333.0	369.3
64°	176.4	225.9	247.6	256.1	304.7	339.1
64.5°	160.4	206.1	226.4	234.4	277.3	309.9
65°	147.2	188.2	207.5	213.7	251.9	281.6
65.5°	135.4	171.2	189.6	194.8	228.3	254.7
66°	125.5	159.4	173.1	177.3	207.1	229.2



TEST NUMBER: P776667

CATALOG NUMBER: HCDJBL54050CSD-HCD61TRMW-5000lm-3500K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
67.5°	104.2	124.5	137.3	137.3	158.5	165.6
68°	100.5	112.7	125.5	129.2	147.6	152.8
68.5°	96.2	106.1	113.7	120.7	136.3	140.6
69°	92.4	101.9	106.6	112.3	125.5	127.8
69.5°	88.7	98.1	101.9	103.8	114.1	115.1
70°	84.9	94.3	98.1	100.0	107.1	108.5
70.5°	81.1	90.1	94.3	95.7	101.9	103.8
71°	77.4	86.3	90.6	92.0	97.6	99.5
71.5°	73.6	82.5	86.8	88.2	93.4	95.3
72°	69.8	78.8	82.5	84.4	89.1	91.0
72.5°	66.5	75.0	78.8	80.7	85.4	86.3
73°	63.2	71.2	75.0	76.9	81.1	82.1
73.5°	59.4	67.9	71.7	73.1	77.4	77.8
74°	56.1	64.1	67.9	69.3	73.1	74.1
74.5°	53.3	60.8	64.6	65.6	69.3	69.8
75°	50.0	57.5	61.3	62.3	65.6	66.0
75.5°	47.2	54.2	58.0	59.0	61.8	62.3
76°	43.9	51.4	54.7	55.7	58.5	58.5
76.5°	41.0	48.1	51.4	52.4	54.7	55.2
77°	38.7	45.3	48.6	49.1	51.4	51.4
77.5°	35.8	42.4	45.3	45.8	48.1	48.1
78°	33.5	39.6	42.4	42.9	44.8	45.3
78.5°	30.7	36.8	39.6	40.1	42.0	42.0
79°	28.3	34.4	36.8	37.3	39.1	39.1
79.5°	25.9	31.6	34.4	34.4	35.8	36.3
80°	23.6	29.2	31.6	32.1	33.5	33.5
80.5°	21.2	26.9	29.2	29.2	30.7	30.7
81°	19.3	24.5	26.9	26.9	27.8	28.3
81.5°	17.0	22.2	24.5	24.5	25.5	25.9
82°	15.1	20.3	22.2	22.2	23.1	23.1
82.5°	13.2	17.9	20.3	20.3	20.8	20.8
83°	11.3	16.0	17.9	17.9	18.4	18.9
83.5°	9.4	14.1	16.0	16.0	16.0	16.5
84°	7.5	12.3	14.1	14.1	14.1	14.6
84.5°	5.7	10.4	12.3	12.3	12.3	12.7
85°	4.2	8.5	10.4	10.4	9.9	10.4
85.5°	2.8	6.6	8.5	8.5	8.5	8.5
86°	1.4	4.7	6.6	7.1	7.1	7.1
86.5°	0.5	3.3	5.2	5.2	5.7	5.2
87°	0.0	1.9	3.3	3.8	4.2	4.2
87.5°	0.0	0.9	1.9	2.4	3.3	3.3
88°	0.0	0.0	0.9	0.9	2.4	2.4
88.5°	0.0	0.0	0.0	0.5	1.4	1.4



TEST NUMBER: P776667

CATALOG NUMBER: HCDJBS4050CSD-HCD61TRMW-5000lm-3500K

CANDELA DISTRIBUTION (continued):

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



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Scaled Data Report





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

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21.5°	2419.6	2448.4	2472.9	2497.5	2483.8	2470.1	2456.4	2426.2	2400.8	2374.4	2347.0
22°	2409.3	2439.5	2464.5	2489.9	2475.8	2462.1	2447.5	2416.3	2390.4	2364.0	2335.7



44°	1662.1	1721.6	1772.5	1828.2	1780.5	1752.2	1730.1	1671.1	1623.0	1571.1	1519.7
44.5°	1638.6	1698.5	1749.4	1806.0	1757.4	1730.1	1707.0	1648.0	1599.4	1548.0	1496.6



66.5°	206.1	244.3	286.3	348.1	277.8	248.1	232.1	188.2	149.0	147.2	132.5
67°	185.4	221.2	259.4	316.0	250.0	222.6	208.0	167.9	134.0	134.0	122.6



89°	0.9	1.9	3.8	6.6	2.8	1.4	0.9	0.0	0.0	0.0	0.0
89.5°	0.5	0.9	2.4	4.7	1.4	0.5	0.5	0.0	0.0	0.0	0.0

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21.5°	2311.2	2330.5	2341.3	2354.6	2389.9	2419.6
22°	2298.4	2318.7	2329.6	2342.8	2379.1	2409.3



44°	1459.8	1505.1	1524.0	1541.4	1602.2	1662.1
44.5°	1437.6	1482.4	1501.3	1518.3	1579.1	1638.6

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66.5°	117.0	147.6	161.3	161.3	187.3	206.1
67°	109.9	135.8	149.0	147.6	169.8	185.4

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

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Scaled Data Report



(END OF REPORT)