

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: P776653

Luminaire Tested: HCDJBS4050CSD-HCD61TRH-5000lm-4000K

Issue Date: 2/13/2024

Test Information

Test Method: LM-79-2019
Report Number: P776653
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (A2312156B036)
Test Lab:
Issue Date: 2/13/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: HALO COMMERCIAL
Catalog Number: HCDJBS4050CSD-HCD61TRH-5000lm-4000K
Description: 6 INCH ROUND SHALLOW-WIDE HAZE TRIM
Light Source: SELECTABLE LUMENS AND CCT ARRAY 90CRI / 4000K CCT
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 5688.1 lumens
Efficiency: N/A
Efficacy: 118.5 lumens/watt
Spacing Criteria (0/90/45): 1.12 / 1.12 / 1.2
Luminous Opening: Circular (Dia: 0.5' x H: 0')
CIE Type: Direct

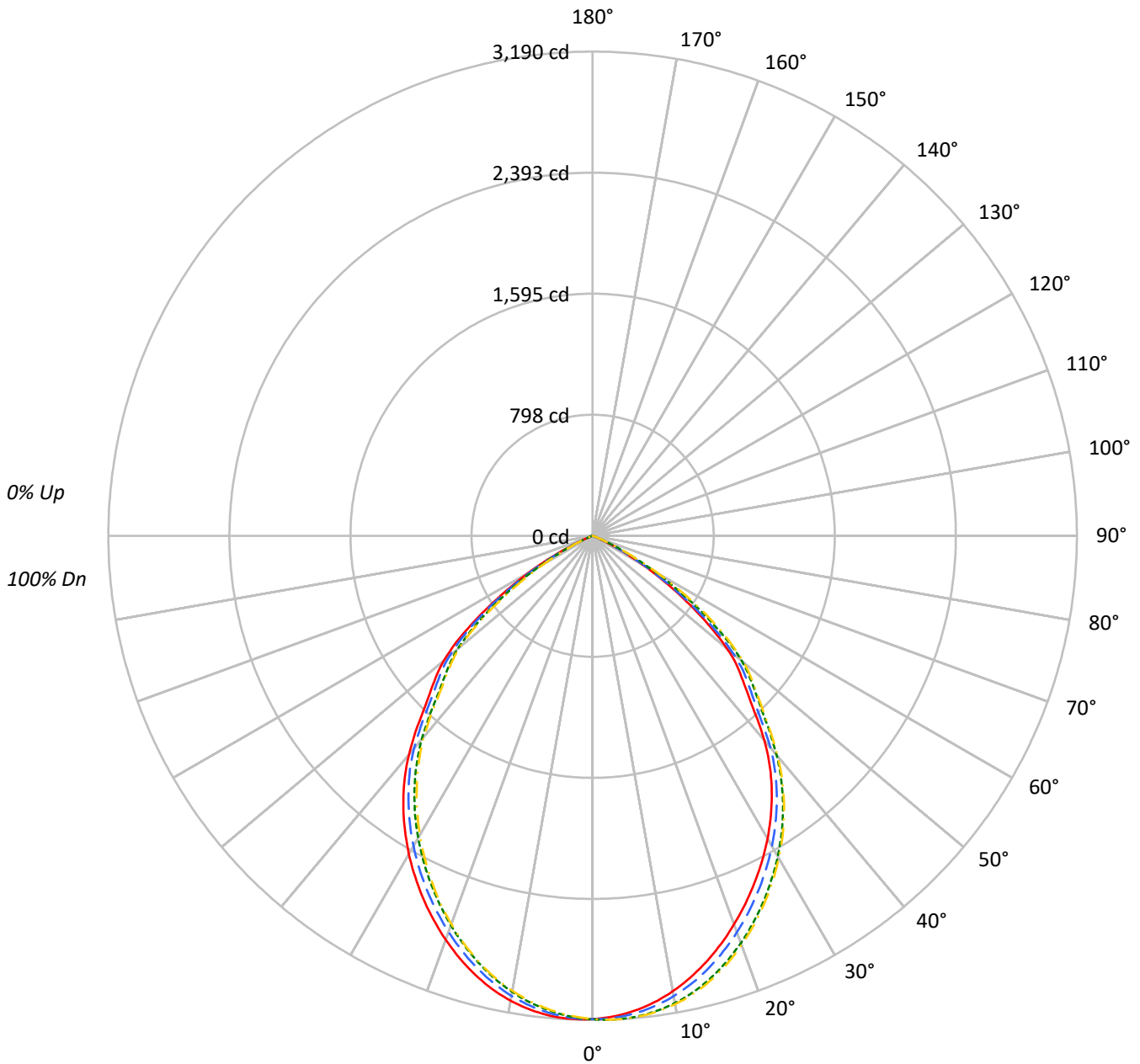
Input Watts (W): 48
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT



TEST NUMBER: P776653

CATALOG NUMBER: HCDJBL54050CSD-HCD61TRH-5000lm-4000K

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	112	108	105	103	109	106	103	101	102	100	98	98	97	95	95	93	92	90	90	90	90	90	90		
	2	104	98	93	89	102	96	91	87	93	89	86	90	87	84	87	84	82	80	80	80	80	80	80		
	3	97	89	82	77	95	87	81	76	84	79	75	82	77	74	79	76	73	71	71	71	71	71	71		
	4	90	80	73	68	88	79	72	67	77	71	66	74	70	65	72	68	65	63	63	63	63	63	63		
	5	84	73	65	60	82	72	65	60	70	64	59	68	63	58	66	62	58	56	56	56	56	56	56		
	6	78	67	59	53	76	66	58	53	64	58	53	62	57	52	61	56	52	50	50	50	50	50	50		
	7	73	61	53	48	71	60	53	48	59	52	48	57	52	47	56	51	47	45	45	45	45	45	45		
	8	68	56	49	43	67	55	48	43	54	48	43	53	47	43	52	47	43	41	41	41	41	41	41		
	9	64	52	45	40	63	51	44	39	50	44	39	49	43	39	48	43	39	37	37	37	37	37	37		
	10	60	48	41	36	59	48	41	36	47	40	36	46	40	36	45	40	36	34	34	34	34	34	34		

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°	270°
0°	174602	174602	174602	174602
5°	172897	175082	174691	173002
10°	169597	173995	173165	169892
15°	164768	171096	169899	165177
20°	158931	166579	165156	159293
25°	152634	160908	159578	152718
30°	145896	154404	153226	145503
35°	137694	146240	145471	136925
40°	125979	134881	134674	125263
45°	110849	120160	119757	110073
50°	98607	109335	108926	99059
55°	72695	84174	84766	74664
60°	41543	51871	53132	44580
65°	11973	19483	18368	15579
70°	305	465	305	914
75°	212	212	212	212
80°	158	158	158	158
85°	314	0	0	314

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 135°
 Vertical Angle: 45°
 Luminance: 121307 cd/sqm



TEST NUMBER: P776653

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	299.2	5.3
10°-20°	831.3	14.6
20°-30°	1189.3	20.9
30°-40°	1316.5	23.1
40°-50°	1156.7	20.3
50°-60°	736.4	12.9
60°-70°	156.8	2.8
70°-80°	1.3	0.0
80°-90°	0.7	0.0
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°	2319.8	40.8
0°-40°	3636.3	63.9
0°-60°	5529.4	97.2
0°-90°	5688.1	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	5688.1	100.0

CANDELA DISTRIBUTION:

	0°	90°	180°	270°	360°	Flux
0°	3185	3185	3185	3185	3185	
5°	3142	3182	3174	3144	3142	297
15°	2903	3015	2994	2910	2903	816
25°	2523	2660	2638	2525	2523	1161
35°	2058	2185	2174	2046	2058	1280
45°	1430	1550	1545	1420	1430	1112
55°	761	881	887	781	761	677
65°	92	150	142	120	92	123
75°	1	1	1	1	1	1
85°	0	0	0	0	0	1
90°	0	0	0	2	0	



TEST NUMBER: P776653

CATALOG NUMBER: HCDJBL54050CSD-HCD61TRH-5000lm-4000K

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
0°	3185.0	3185.0	3185.0	3185.0	3185.0	3185.0	3185.0	3185.0	3185.0	3185.0	3185.0
0.5°	3182.6	3184.0	3185.5	3185.0	3188.3	3187.9	3186.4	3185.9	3185.9	3185.9	3185.5
1°	3180.2	3182.1	3185.0	3185.0	3189.3	3189.3	3187.9	3187.4	3186.9	3185.9	3184.5
1.5°	3177.3	3180.2	3183.6	3185.0	3190.2	3190.7	3189.3	3188.3	3186.9	3185.5	3183.1
2°	3173.5	3177.3	3181.6	3184.0	3190.2	3191.2	3190.2	3188.8	3186.9	3184.0	3181.2
2.5°	3169.7	3174.0	3179.2	3182.6	3190.2	3191.7	3190.2	3188.8	3185.9	3182.6	3178.8
3°	3165.4	3170.2	3176.4	3181.2	3189.3	3191.2	3190.2	3187.9	3185.0	3180.7	3175.9
3.5°	3160.1	3165.9	3173.0	3178.8	3188.3	3190.2	3189.8	3186.9	3183.1	3177.8	3172.1
4°	3154.4	3161.1	3169.2	3175.9	3186.4	3189.3	3188.3	3185.5	3180.7	3174.9	3167.8
4.5°	3148.2	3155.8	3164.4	3172.1	3184.5	3187.9	3186.9	3183.6	3177.8	3171.1	3163.5
5°	3141.9	3149.6	3159.2	3168.2	3181.6	3185.5	3184.5	3180.7	3174.5	3166.8	3158.7
5.5°	3134.8	3142.9	3153.4	3163.9	3178.8	3182.6	3182.1	3177.8	3170.2	3162.0	3152.9
6°	3126.6	3135.7	3147.7	3159.2	3174.9	3179.7	3178.8	3174.0	3165.9	3156.3	3146.2
6.5°	3119.0	3128.1	3141.0	3153.4	3170.6	3175.9	3174.9	3169.7	3161.1	3150.5	3140.0
7°	3110.4	3119.9	3133.8	3147.2	3165.9	3171.6	3170.6	3164.9	3155.8	3144.3	3132.8
7.5°	3100.8	3111.3	3126.1	3140.5	3160.1	3166.8	3165.9	3159.6	3149.6	3137.1	3124.7
8°	3091.2	3101.7	3117.5	3133.3	3154.8	3161.5	3160.6	3153.4	3142.9	3130.0	3116.6
8.5°	3080.7	3092.2	3108.9	3126.1	3148.2	3155.8	3154.8	3147.2	3135.7	3121.8	3107.5
9°	3070.2	3081.7	3099.8	3117.5	3141.0	3149.1	3148.2	3140.0	3127.6	3113.2	3097.9
9.5°	3058.7	3071.1	3089.8	3108.9	3133.3	3142.4	3141.0	3132.8	3119.4	3104.1	3088.4
10°	3046.7	3059.2	3079.3	3099.8	3125.7	3134.8	3133.8	3124.7	3110.8	3094.6	3077.8
10.5°	3034.3	3047.2	3068.7	3089.8	3117.1	3126.6	3125.7	3116.1	3101.7	3084.5	3066.8
11°	3021.4	3035.3	3057.3	3079.3	3108.0	3118.0	3117.1	3106.5	3091.2	3074.0	3055.3
11.5°	3008.0	3022.3	3045.3	3068.3	3097.9	3108.4	3107.5	3097.0	3080.7	3062.5	3043.4
12°	2994.6	3008.9	3033.3	3056.8	3087.9	3098.9	3097.9	3086.4	3070.2	3050.6	3031.0
12.5°	2980.2	2995.6	3020.4	3045.3	3076.9	3088.4	3087.4	3075.9	3058.7	3038.6	3018.0
13°	2965.4	2981.7	3007.0	3032.9	3065.4	3077.8	3076.4	3064.4	3046.3	3025.7	3004.6
13.5°	2950.6	2966.8	2993.2	3019.9	3053.4	3066.4	3064.9	3052.5	3034.3	3012.8	2991.2
14°	2935.3	2952.0	2979.3	3006.1	3041.0	3054.4	3053.0	3040.0	3020.9	2998.9	2976.9
14.5°	2919.5	2936.2	2964.5	2993.2	3028.1	3041.5	3040.0	3027.1	3007.0	2985.0	2961.6
15°	2903.2	2920.4	2949.6	2978.3	3014.7	3028.6	3027.1	3013.3	2993.6	2970.2	2946.8
15.5°	2887.0	2904.7	2933.8	2964.0	3000.8	3014.7	3013.3	2999.4	2979.3	2955.4	2931.5
16°	2869.7	2887.9	2918.1	2947.7	2986.5	3001.3	2998.9	2985.0	2963.5	2940.1	2915.2
16.5°	2853.0	2871.2	2902.3	2933.4	2971.2	2986.5	2984.1	2970.2	2948.7	2924.3	2898.9
17°	2834.8	2854.0	2885.5	2917.1	2955.8	2971.6	2969.2	2954.9	2932.9	2908.5	2882.7
17.5°	2817.1	2836.7	2868.3	2900.4	2940.1	2955.4	2953.9	2938.6	2917.1	2891.7	2865.9
18°	2798.9	2819.0	2851.6	2883.1	2923.8	2939.6	2937.2	2922.4	2900.4	2875.0	2847.7
18.5°	2780.8	2800.9	2833.9	2866.9	2907.1	2922.8	2920.9	2906.1	2883.1	2857.8	2831.0
19°	2762.1	2783.2	2816.2	2849.2	2889.8	2906.1	2904.2	2888.9	2866.4	2840.6	2812.8
19.5°	2743.9	2765.0	2798.0	2831.9	2872.6	2888.9	2887.0	2872.1	2848.7	2822.9	2795.1
20°	2724.3	2745.8	2779.3	2813.3	2855.4	2871.2	2869.3	2854.4	2831.0	2804.7	2776.5
20.5°	2705.2	2726.7	2760.7	2794.6	2836.7	2853.5	2851.6	2836.3	2813.3	2786.5	2758.3
21°	2685.6	2708.1	2742.0	2776.5	2818.6	2834.8	2832.9	2818.1	2794.6	2767.8	2738.7



TEST NUMBER: P776653

CATALOG NUMBER: HCDJBL54050CSD-HCD61TRH-5000lm-4000K

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
22.5°	2625.8	2649.2	2683.7	2718.1	2761.2	2777.4	2776.0	2760.7	2738.2	2710.4	2680.8
23°	2606.2	2629.6	2663.6	2698.5	2741.1	2757.8	2756.4	2741.5	2718.6	2690.8	2660.2
23.5°	2585.6	2609.5	2643.5	2678.4	2721.4	2738.2	2736.3	2721.9	2698.5	2671.2	2640.6
24°	2565.0	2588.9	2622.4	2657.8	2701.8	2718.1	2716.7	2701.4	2678.9	2651.1	2620.0
24.5°	2544.4	2568.4	2602.3	2637.7	2681.3	2696.6	2696.1	2680.8	2658.3	2630.1	2599.9
25°	2523.4	2547.8	2581.3	2616.2	2660.2	2676.0	2675.0	2660.2	2638.2	2610.0	2578.9
25.5°	2502.8	2527.2	2560.7	2595.6	2639.2	2655.0	2654.0	2639.6	2617.6	2588.9	2558.3
26°	2481.3	2506.7	2539.7	2574.6	2618.1	2632.9	2632.5	2619.1	2596.6	2567.9	2536.8
26.5°	2459.8	2485.1	2517.7	2553.1	2596.6	2611.9	2611.4	2597.5	2575.1	2546.4	2515.7
27°	2438.7	2464.1	2496.1	2531.5	2575.1	2589.4	2589.9	2575.1	2554.0	2524.8	2494.2
27.5°	2416.7	2442.6	2474.6	2508.6	2552.6	2567.4	2567.9	2553.5	2532.5	2503.3	2472.2
28°	2394.7	2420.6	2452.1	2486.6	2530.6	2545.9	2544.9	2532.0	2510.5	2481.3	2449.7
28.5°	2372.2	2398.1	2429.6	2463.6	2507.6	2522.0	2522.0	2509.5	2488.5	2458.8	2428.2
29°	2349.8	2376.5	2407.2	2441.1	2485.1	2499.0	2499.5	2486.1	2466.0	2436.3	2405.7
29.5°	2327.3	2353.6	2384.7	2417.7	2462.2	2475.6	2476.5	2463.1	2443.5	2413.9	2383.2
30°	2304.8	2331.1	2361.7	2394.7	2439.2	2453.1	2452.6	2440.6	2420.6	2390.9	2359.8
30.5°	2280.9	2308.1	2338.3	2371.8	2414.3	2428.2	2428.2	2417.2	2396.6	2367.5	2336.4
31°	2256.9	2284.7	2314.8	2347.4	2390.9	2403.8	2404.8	2392.3	2373.7	2344.5	2313.4
31.5°	2233.5	2261.3	2290.4	2323.0	2366.0	2379.4	2379.9	2368.9	2349.3	2320.6	2290.0
32°	2209.6	2237.8	2266.5	2298.6	2341.6	2355.5	2355.0	2344.5	2325.8	2296.2	2266.0
32.5°	2185.2	2212.9	2242.1	2274.2	2316.7	2329.7	2329.2	2320.1	2301.4	2272.3	2241.2
33°	2160.3	2188.5	2217.2	2249.3	2291.4	2303.8	2304.8	2294.7	2276.6	2247.9	2216.8
33.5°	2135.4	2163.2	2192.4	2223.5	2265.1	2278.0	2278.5	2269.4	2250.7	2223.5	2192.4
34°	2109.6	2138.3	2167.0	2198.6	2239.2	2252.6	2252.2	2243.6	2225.4	2197.6	2167.0
34.5°	2083.8	2113.0	2141.2	2171.3	2212.9	2224.4	2225.4	2216.8	2199.5	2171.8	2141.7
35°	2057.5	2086.6	2115.4	2145.0	2185.2	2198.1	2198.6	2190.0	2173.7	2146.4	2115.4
35.5°	2030.2	2060.3	2089.0	2117.7	2158.4	2169.9	2170.8	2163.2	2146.4	2120.6	2089.0
36°	2002.9	2034.0	2061.8	2090.5	2130.7	2142.6	2143.1	2135.9	2120.1	2094.3	2063.7
36.5°	1974.7	2005.8	2034.5	2062.3	2102.9	2113.0	2114.9	2107.2	2092.4	2066.6	2036.9
37°	1947.0	1977.6	2006.8	2034.0	2072.8	2084.3	2085.2	2078.5	2065.1	2039.3	2009.2
37.5°	1918.3	1948.4	1978.1	2005.3	2043.6	2053.6	2055.1	2049.3	2035.9	2012.0	1981.4
38°	1888.1	1919.7	1948.9	1974.7	2013.5	2023.5	2025.4	2019.2	2006.3	1983.3	1954.6
38.5°	1858.0	1889.6	1918.7	1944.1	1982.4	1992.9	1994.8	1988.1	1977.1	1954.1	1924.5
39°	1826.4	1858.9	1887.6	1913.5	1950.8	1960.4	1962.8	1957.0	1947.0	1924.5	1894.3
39.5°	1793.9	1825.0	1854.6	1880.0	1917.8	1927.8	1930.2	1925.0	1915.4	1892.9	1862.3
40°	1760.4	1791.5	1820.2	1846.0	1884.8	1894.8	1896.7	1892.4	1881.9	1860.9	1832.2
40.5°	1724.0	1756.1	1785.3	1811.1	1849.4	1859.9	1863.3	1858.5	1848.4	1827.4	1797.2
41°	1689.1	1720.7	1749.9	1776.2	1814.9	1825.5	1827.9	1823.5	1814.5	1792.5	1762.3
41.5°	1654.7	1685.3	1714.5	1741.3	1780.5	1790.5	1793.9	1788.6	1779.1	1756.6	1726.9
42°	1619.8	1649.9	1679.1	1705.9	1745.6	1757.5	1760.4	1755.6	1745.1	1723.1	1694.4
42.5°	1581.5	1612.6	1642.2	1669.5	1710.7	1722.1	1726.0	1721.7	1710.7	1688.6	1658.5
43°	1547.0	1577.7	1607.8	1634.6	1674.8	1686.7	1690.6	1685.3	1674.8	1651.8	1623.1
43.5°	1515.0	1545.1	1575.3	1602.1	1641.3	1653.2	1656.6	1650.4	1637.9	1615.0	1586.3



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
45°	1429.8	1459.5	1488.2	1513.6	1549.9	1561.4	1564.7	1558.1	1544.7	1521.2	1493.9
45.5°	1403.1	1433.2	1461.9	1486.8	1522.2	1533.2	1536.5	1529.8	1516.4	1493.9	1466.2
46°	1378.2	1408.3	1436.1	1460.9	1495.4	1505.9	1509.3	1502.6	1489.6	1467.2	1439.9
46.5°	1353.3	1383.4	1410.7	1435.1	1469.1	1480.1	1483.4	1477.2	1463.8	1441.3	1414.1
47°	1328.9	1358.6	1386.3	1410.2	1443.2	1454.2	1457.6	1451.4	1438.0	1416.5	1389.7
47.5°	1304.5	1334.2	1361.4	1385.4	1417.9	1429.4	1432.7	1425.5	1412.6	1391.6	1364.8
48°	1279.6	1309.3	1335.6	1360.5	1392.5	1404.5	1407.4	1400.7	1388.2	1367.2	1340.4
48.5°	1251.9	1281.1	1308.8	1334.2	1367.7	1379.6	1383.0	1376.7	1363.4	1342.3	1316.0
49°	1221.8	1249.0	1277.2	1305.0	1340.4	1353.3	1357.6	1350.9	1336.6	1314.6	1289.2
49.5°	1191.1	1217.0	1245.7	1274.4	1311.7	1325.6	1329.4	1321.7	1307.4	1284.4	1258.6
50°	1156.2	1181.1	1209.8	1240.9	1282.0	1297.3	1301.2	1293.0	1277.2	1254.3	1228.5
50.5°	1119.4	1144.7	1174.4	1206.4	1249.5	1265.3	1268.6	1262.9	1245.7	1222.7	1195.0
51°	1081.6	1107.9	1135.6	1169.1	1214.6	1228.9	1234.2	1228.5	1212.2	1187.8	1160.5
51.5°	1043.3	1069.2	1097.4	1129.9	1177.7	1193.1	1199.8	1191.6	1177.3	1151.9	1124.6
52°	1004.1	1029.5	1057.2	1088.8	1137.6	1155.7	1162.4	1154.8	1139.5	1114.6	1087.8
52.5°	964.4	989.3	1018.0	1047.2	1096.4	1117.5	1124.2	1116.5	1099.3	1075.4	1050.0
53°	923.7	948.6	975.4	1003.6	1053.8	1077.8	1086.4	1076.3	1056.7	1034.2	1011.8
53.5°	883.1	907.0	934.3	960.1	1010.8	1038.1	1048.1	1037.1	1015.1	994.1	971.6
54°	841.9	865.4	890.7	915.6	967.3	996.0	1007.9	994.1	972.5	952.0	930.9
54.5°	801.3	825.7	847.7	872.1	924.2	954.3	966.3	952.0	929.0	909.9	889.8
55°	760.6	783.6	803.7	828.1	880.7	913.7	926.1	910.8	886.9	867.8	849.6
55.5°	719.5	742.0	761.1	784.5	838.6	870.6	885.5	868.7	845.8	824.7	807.5
56°	679.3	699.9	718.0	740.0	795.1	827.6	842.4	824.7	803.2	781.2	765.9
56.5°	639.6	659.7	674.5	697.5	752.5	786.0	800.3	783.1	761.6	738.6	724.3
57°	600.4	618.1	631.4	654.9	709.9	742.0	757.7	741.5	719.9	697.0	683.6
57.5°	561.1	577.9	590.3	614.2	669.7	700.3	716.1	700.8	680.2	655.4	641.5
58°	522.9	537.7	550.1	573.1	629.1	657.8	673.1	659.2	639.6	613.7	601.3
58.5°	485.5	498.9	509.9	534.3	589.8	617.1	631.0	619.5	601.3	574.5	562.1
59°	448.7	459.7	470.7	495.6	550.1	576.0	588.9	578.8	561.6	535.8	522.4
59.5°	414.3	422.9	433.4	457.3	511.4	536.3	547.3	541.0	522.4	498.5	484.6
60°	378.9	385.1	396.6	421.0	473.1	496.5	507.1	500.9	484.6	463.5	448.7
60.5°	344.9	350.2	361.2	385.6	437.2	459.7	469.3	464.5	449.2	428.6	413.3
61°	312.4	315.7	326.2	349.7	401.8	422.9	431.5	428.6	413.8	393.7	377.9
61.5°	280.8	283.7	293.7	318.6	366.0	386.0	393.7	392.3	378.4	358.8	342.5
62°	249.7	251.6	263.1	286.1	330.1	349.2	355.9	355.9	343.0	323.9	307.1
62.5°	221.0	222.0	233.0	255.4	296.6	312.4	318.1	319.6	307.6	292.3	276.0
63°	192.8	193.3	205.2	226.7	264.5	278.9	284.2	286.1	271.2	262.1	245.9
63.5°	164.1	167.4	178.0	199.0	233.4	245.9	251.6	253.1	237.3	233.0	217.7
64°	140.2	146.4	156.9	172.2	204.3	215.7	221.0	222.4	204.3	204.7	190.9
64.5°	116.2	125.8	135.9	150.7	176.0	186.6	191.8	192.3	172.2	178.4	165.5
65°	92.3	105.7	114.8	129.2	150.2	158.8	164.6	164.6	141.6	152.6	142.1
65.5°	68.4	85.1	93.8	107.6	125.3	133.5	138.7	137.8	114.3	129.2	121.0
66°	50.2	64.6	72.7	86.1	102.4	109.5	114.8	112.9	89.0	106.7	100.0



TEST NUMBER: P776653

CATALOG NUMBER: HCDJBL54050CSD-HCD61TRH-5000lm-4000K

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
67.5°	15.8	27.3	31.6	34.9	53.6	57.9	62.2	60.8	40.7	59.3	56.0
68°	12.4	18.7	22.0	23.4	39.7	43.1	46.4	45.9	24.4	45.4	43.5
68.5°	9.1	14.4	13.4	14.8	25.4	28.2	31.1	31.1	8.1	31.6	30.6
69°	5.7	10.5	10.5	11.5	11.5	13.9	15.8	16.3	3.8	18.2	18.2
69.5°	2.4	6.2	7.7	8.1	5.7	7.2	8.1	9.1	2.4	11.0	10.5
70°	1.9	2.4	4.8	4.8	2.9	3.3	3.8	4.3	1.9	5.7	5.7
70.5°	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2.4	1.9	2.9	2.9
71°	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9
71.5°	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.9	1.9	1.9
72°	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.9	1.9
72.5°	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4
73°	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4
73.5°	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4
74°	1.0	1.0	1.4	1.0	1.0	1.0	1.0	1.0	1.0	1.4	1.4
74.5°	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.4
75°	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
75.5°	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
76°	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
76.5°	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
77°	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
77.5°	1.0	1.0	1.0	1.0	0.5	0.5	0.5	0.5	0.5	1.0	1.0
78°	1.0	0.5	1.0	0.5	0.5	0.5	0.5	0.5	0.5	1.0	1.0
78.5°	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
79°	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
79.5°	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
80°	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
80.5°	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
81°	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
81.5°	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
82°	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
82.5°	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
83°	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
83.5°	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
84°	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.0	0.0	0.5	0.5
84.5°	0.5	0.5	0.5	0.5	0.5	0.0	0.0	0.0	0.0	0.5	0.5
85°	0.5	0.5	0.5	0.5	0.0	0.0	0.0	0.0	0.0	0.5	0.5
85.5°	0.5	0.5	0.5	0.5	0.0	0.0	0.0	0.0	0.0	0.5	0.5
86°	0.5	0.5	0.5	0.5	0.0	0.0	0.0	0.0	0.0	0.5	0.5
86.5°	0.5	0.5	0.5	0.5	0.0	0.0	0.0	0.0	0.0	0.5	0.5
87°	0.5	0.5	0.5	0.5	0.0	0.0	0.0	0.0	0.0	0.5	0.5
87.5°	0.5	0.5	0.5	0.5	0.0	0.0	0.0	0.0	0.0	0.5	0.5
88°	0.5	1.0	1.0	0.5	0.0	0.0	0.0	0.0	0.0	0.5	0.5
88.5°	0.5	1.0	1.0	1.0	0.0	0.0	0.0	0.0	0.0	0.5	0.5



TEST NUMBER: P776653

CATALOG NUMBER: HCDJBL54050CSD-HCD61TRH-5000lm-4000K

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
90°	0.5	1.4	1.4	1.0	0.5	0.0	0.0	0.5	0.0	1.0	0.5



TEST NUMBER: P776653

CATALOG NUMBER: HCDJBL54050CSD-HCD61TRH-5000lm-4000K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
0°	3185.0	3185.0	3185.0	3185.0	3185.0	3185.0
0.5°	3183.1	3184.5	3183.1	3181.2	3181.6	3182.6
1°	3181.6	3182.1	3180.2	3178.3	3178.8	3180.2
1.5°	3179.2	3178.8	3176.4	3174.5	3174.9	3177.3
2°	3176.9	3175.4	3172.5	3170.6	3171.6	3173.5
2.5°	3173.5	3171.1	3168.2	3165.9	3166.8	3169.7
3°	3169.7	3166.8	3163.5	3161.1	3162.0	3165.4
3.5°	3165.9	3161.5	3158.2	3155.8	3156.8	3160.1
4°	3161.1	3156.3	3152.5	3150.1	3151.0	3154.4
4.5°	3155.8	3150.1	3146.2	3143.4	3144.8	3148.2
5°	3150.1	3143.8	3140.0	3137.1	3138.1	3141.9
5.5°	3143.8	3136.7	3132.8	3129.5	3130.5	3134.8
6°	3137.1	3129.5	3125.2	3122.3	3122.8	3126.6
6.5°	3129.5	3121.8	3117.5	3114.2	3114.2	3119.0
7°	3121.8	3113.2	3108.9	3105.6	3106.1	3110.4
7.5°	3113.7	3104.1	3099.8	3096.5	3097.0	3100.8
8°	3104.6	3095.1	3090.3	3086.9	3086.9	3091.2
8.5°	3095.1	3085.0	3080.7	3076.9	3076.9	3080.7
9°	3085.0	3074.5	3070.2	3066.8	3065.9	3070.2
9.5°	3074.5	3063.5	3059.2	3055.8	3054.9	3058.7
10°	3063.5	3052.0	3047.7	3044.3	3042.9	3046.7
10.5°	3052.0	3040.0	3035.7	3032.4	3031.0	3034.3
11°	3039.6	3027.6	3023.3	3019.9	3018.0	3021.4
11.5°	3027.1	3014.2	3010.4	3007.0	3005.1	3008.0
12°	3014.7	3001.3	2997.0	2993.6	2991.2	2994.6
12.5°	3000.8	2986.9	2983.1	2979.8	2977.4	2980.2
13°	2986.9	2972.6	2969.2	2965.9	2962.5	2965.4
13.5°	2972.1	2957.3	2954.4	2950.6	2947.7	2950.6
14°	2957.3	2942.0	2939.1	2935.3	2932.4	2935.3
14.5°	2942.5	2926.7	2923.8	2920.0	2916.6	2919.5
15°	2926.2	2910.4	2907.5	2903.7	2899.9	2903.2
15.5°	2909.9	2894.1	2890.8	2887.4	2883.6	2887.0
16°	2893.7	2876.9	2873.6	2870.2	2866.9	2869.7
16.5°	2876.9	2859.7	2856.8	2853.5	2849.2	2853.0
17°	2860.2	2842.5	2839.1	2835.8	2831.9	2834.8
17.5°	2843.0	2824.3	2820.9	2817.6	2813.3	2817.1
18°	2824.8	2806.1	2802.8	2799.4	2795.1	2798.9
18.5°	2806.6	2787.5	2783.6	2780.8	2776.5	2780.8
19°	2787.9	2768.8	2765.0	2761.6	2757.8	2762.1
19.5°	2769.8	2750.1	2745.8	2742.5	2738.7	2743.9
20°	2751.1	2730.5	2725.8	2722.4	2719.1	2724.3
20.5°	2732.0	2710.9	2706.1	2702.8	2699.4	2705.2
21°	2712.8	2690.4	2686.0	2682.2	2679.3	2685.6

TEST NUMBER: P776653

CATALOG NUMBER: HCDJBL54050CSD-HCD61TRH-5000lm-4000K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
22.5°	2653.5	2630.1	2623.9	2620.0	2618.6	2625.8
23°	2633.4	2609.0	2602.8	2597.5	2598.0	2606.2
23.5°	2613.3	2588.0	2581.3	2577.0	2577.0	2585.6
24°	2592.8	2566.9	2559.3	2554.5	2555.9	2565.0
24.5°	2571.7	2545.9	2537.8	2533.0	2533.9	2544.4
25°	2551.1	2524.8	2515.3	2510.0	2512.4	2523.4
25.5°	2530.1	2503.3	2493.3	2488.5	2491.3	2502.8
26°	2508.6	2481.3	2470.3	2464.6	2469.3	2481.3
26.5°	2487.0	2458.8	2448.3	2442.6	2447.3	2459.8
27°	2465.5	2436.8	2424.9	2419.1	2424.9	2438.7
27.5°	2444.0	2414.3	2401.9	2395.7	2401.9	2416.7
28°	2422.0	2391.4	2378.5	2372.2	2378.9	2394.7
28.5°	2399.5	2368.4	2355.0	2348.3	2356.0	2372.2
29°	2377.0	2345.4	2331.1	2323.9	2333.0	2349.8
29.5°	2354.5	2322.0	2307.2	2300.0	2309.1	2327.3
30°	2331.6	2298.6	2282.3	2276.1	2285.2	2304.8
30.5°	2308.1	2274.6	2257.9	2251.2	2261.3	2280.9
31°	2285.2	2250.3	2233.0	2225.9	2236.9	2256.9
31.5°	2260.8	2225.9	2208.2	2201.0	2212.0	2233.5
32°	2236.4	2201.5	2182.3	2175.6	2187.6	2209.6
32.5°	2212.5	2176.6	2157.0	2150.3	2162.2	2185.2
33°	2187.6	2150.8	2131.6	2124.9	2136.9	2160.3
33.5°	2162.7	2124.9	2105.8	2098.6	2111.5	2135.4
34°	2136.9	2099.1	2080.0	2072.3	2085.7	2109.6
34.5°	2111.0	2072.8	2052.7	2046.0	2059.4	2083.8
35°	2085.2	2046.0	2025.9	2019.2	2032.6	2057.5
35.5°	2058.9	2018.7	1999.6	1992.4	2005.8	2030.2
36°	2032.6	1991.0	1971.8	1965.1	1978.5	2002.9
36.5°	2004.8	1963.2	1944.6	1937.4	1951.3	1974.7
37°	1976.6	1934.5	1915.9	1909.7	1923.0	1947.0
37.5°	1948.4	1905.3	1887.2	1881.4	1894.3	1918.3
38°	1919.2	1876.2	1858.5	1852.2	1865.2	1888.1
38.5°	1889.6	1845.6	1828.3	1822.6	1835.0	1858.0
39°	1858.5	1814.9	1798.7	1792.9	1805.4	1826.4
39.5°	1827.9	1782.9	1766.6	1761.8	1772.4	1793.9
40°	1795.8	1750.4	1733.6	1728.8	1738.9	1760.4
40.5°	1761.8	1716.4	1699.6	1694.9	1704.0	1724.0
41°	1726.9	1681.5	1665.2	1659.9	1670.0	1689.1
41.5°	1692.0	1646.5	1630.3	1626.0	1634.6	1654.7
42°	1658.5	1613.5	1596.8	1591.5	1601.1	1619.8
42.5°	1624.1	1579.1	1561.9	1555.2	1564.3	1581.5
43°	1589.1	1543.2	1526.5	1521.2	1529.3	1547.0
43.5°	1553.3	1508.3	1492.0	1486.8	1495.9	1515.0

TEST NUMBER: P776653

CATALOG NUMBER: HCDJBL54050CSD-HCD61TRH-5000lm-4000K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
45°	1460.9	1419.8	1404.5	1400.2	1409.8	1429.8
45.5°	1433.7	1392.5	1377.2	1373.9	1383.4	1403.1
46°	1407.8	1367.2	1352.4	1348.5	1358.6	1378.2
46.5°	1382.0	1342.8	1327.5	1324.1	1333.7	1353.3
47°	1358.6	1318.9	1303.1	1299.7	1309.3	1328.9
47.5°	1333.7	1293.5	1279.2	1275.3	1285.4	1304.5
48°	1309.8	1270.6	1255.2	1251.4	1261.0	1279.6
48.5°	1285.9	1245.2	1231.3	1226.5	1235.6	1251.9
49°	1259.5	1219.8	1205.0	1199.8	1207.4	1221.8
49.5°	1230.4	1190.2	1177.7	1172.0	1177.3	1191.1
50°	1200.2	1161.5	1148.1	1142.3	1145.2	1156.2
50.5°	1167.7	1128.0	1116.5	1108.9	1109.8	1119.4
51°	1132.3	1093.6	1081.1	1073.0	1073.5	1081.6
51.5°	1096.9	1056.2	1044.3	1034.2	1036.1	1043.3
52°	1061.0	1018.9	1005.1	994.5	995.5	1004.1
52.5°	1023.2	979.2	964.9	954.3	954.8	964.4
53°	985.0	940.0	924.2	912.7	913.7	923.7
53.5°	945.3	899.8	882.6	871.1	872.1	883.1
54°	906.0	860.1	841.5	829.5	830.4	841.9
54.5°	866.3	820.9	800.8	787.9	788.8	801.3
55°	827.6	781.2	759.2	745.8	747.7	760.6
55.5°	787.4	740.5	719.0	703.2	707.5	719.5
56°	746.7	701.3	678.3	662.1	667.3	679.3
56.5°	707.5	662.5	639.1	621.9	628.1	639.6
57°	666.8	624.3	598.9	581.7	588.4	600.4
57.5°	628.1	586.5	560.6	542.9	549.6	561.1
58°	589.4	549.2	523.3	505.6	511.9	522.9
58.5°	550.1	511.9	487.0	468.3	476.0	485.5
59°	511.9	476.0	451.6	432.9	438.7	448.7
59.5°	476.0	441.1	416.2	398.5	404.7	414.3
60°	440.6	406.6	382.2	365.0	371.2	378.9
60.5°	405.2	371.7	349.7	333.4	338.2	344.9
61°	369.8	339.2	317.6	303.3	305.7	312.4
61.5°	334.4	307.1	288.0	275.1	277.0	280.8
62°	301.4	275.5	258.8	246.4	247.8	249.7
62.5°	269.8	245.4	231.1	220.5	219.6	221.0
63°	239.2	216.7	204.7	195.2	192.8	192.8
63.5°	210.0	189.4	180.3	172.2	168.9	164.1
64°	182.3	163.1	159.8	153.1	149.3	140.2
64.5°	157.4	141.6	139.7	133.5	129.6	116.2
65°	133.0	120.1	119.6	114.3	109.5	92.3
65.5°	111.0	99.0	99.0	95.2	89.9	68.4
66°	90.9	77.5	78.9	76.1	69.8	50.2



TEST NUMBER: P776653

CATALOG NUMBER: HCDJBL54050CSD-HCD61TRH-5000lm-4000K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
67.5°	49.8	34.9	36.8	36.4	30.1	15.8
68°	38.3	24.9	26.8	25.8	21.0	12.4
68.5°	26.8	17.2	17.7	17.2	17.2	9.1
69°	15.3	13.4	13.9	13.4	13.4	5.7
69.5°	9.1	9.6	10.0	9.6	9.6	2.4
70°	4.8	5.7	5.7	5.7	5.7	1.9
70.5°	2.4	1.9	1.9	1.9	1.9	1.9
71°	1.9	1.9	1.9	1.9	1.9	1.9
71.5°	1.9	1.4	1.4	1.4	1.4	1.4
72°	1.4	1.4	1.4	1.4	1.4	1.4
72.5°	1.4	1.4	1.4	1.4	1.4	1.4
73°	1.4	1.4	1.4	1.4	1.4	1.4
73.5°	1.4	1.4	1.4	1.4	1.4	1.4
74°	1.4	1.4	1.4	1.4	1.0	1.0
74.5°	1.0	1.0	1.0	1.0	1.0	1.0
75°	1.0	1.0	1.0	1.0	1.0	1.0
75.5°	1.0	1.0	1.0	1.0	1.0	1.0
76°	1.0	1.0	1.0	1.0	1.0	1.0
76.5°	1.0	1.0	1.0	1.0	1.0	1.0
77°	1.0	1.0	1.0	1.0	1.0	1.0
77.5°	1.0	1.0	1.0	1.0	1.0	1.0
78°	1.0	1.0	1.0	1.0	1.0	1.0
78.5°	0.5	1.0	1.0	1.0	1.0	0.5
79°	0.5	0.5	1.0	1.0	1.0	0.5
79.5°	0.5	0.5	1.0	1.0	0.5	0.5
80°	0.5	0.5	1.0	1.0	0.5	0.5
80.5°	0.5	0.5	1.0	1.0	0.5	0.5
81°	0.5	0.5	1.0	1.0	0.5	0.5
81.5°	0.5	0.5	1.0	1.0	0.5	0.5
82°	0.5	0.5	1.0	1.0	0.5	0.5
82.5°	0.5	0.5	1.0	1.0	0.5	0.5
83°	0.5	0.5	1.0	1.0	0.5	0.5
83.5°	0.5	0.5	1.0	1.0	0.5	0.5
84°	0.5	0.5	1.0	1.0	0.5	0.5
84.5°	0.5	0.5	1.0	1.0	0.5	0.5
85°	0.5	0.5	1.0	1.0	1.0	0.5
85.5°	0.5	0.5	1.0	1.0	1.0	0.5
86°	0.5	0.5	1.0	1.0	1.0	0.5
86.5°	0.5	0.5	1.0	1.4	1.0	0.5
87°	0.5	0.5	1.4	1.4	1.4	0.5
87.5°	0.5	1.0	1.4	1.9	1.4	0.5
88°	0.5	1.0	1.9	2.4	1.9	0.5
88.5°	0.5	1.0	2.4	2.9	2.4	0.5



TEST NUMBER: P776653

CATALOG NUMBER: HCDJBL54050CSD-HCD61TRH-5000lm-4000K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
90°	0.5	1.9	3.3	2.4	3.3	0.5



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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°	2666.0	2688.4	2722.4	2756.8	2799.9	2815.7	2813.8	2798.9	2775.5	2749.2	2719.5
22°	2645.9	2668.8	2702.8	2738.2	2780.8	2797.0	2795.1	2779.8	2756.8	2730.1	2699.9



44°	1484.9	1515.5	1544.7	1571.4	1609.7	1621.7	1624.5	1617.8	1604.5	1581.0	1553.7
44.5°	1456.6	1486.8	1516.0	1541.8	1579.1	1590.6	1593.4	1587.7	1573.8	1550.4	1521.7



66.5°	36.4	49.8	56.9	64.6	81.8	87.5	92.8	90.4	72.7	86.6	81.8
67°	24.9	37.3	43.5	48.8	67.9	72.7	77.5	75.6	56.4	72.7	68.9



89°	0.5	1.0	1.4	1.0	0.0	0.0	0.0	0.5	0.0	0.5	0.5
89.5°	0.5	1.4	1.4	1.0	0.5	0.0	0.0	0.5	0.0	0.5	0.5

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21.5°	2693.7	2670.3	2665.5	2661.6	2659.7	2666.0
22°	2673.1	2650.2	2644.9	2640.1	2638.7	2645.9



44°	1520.3	1477.2	1461.9	1456.2	1466.2	1484.9
44.5°	1489.6	1448.0	1432.2	1427.9	1437.5	1456.6

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66.5°	73.2	60.8	63.6	61.2	55.0	36.4
67°	61.2	46.4	49.3	47.8	41.6	24.9



89°	0.5	1.4	2.4	3.3	2.4	0.5
89.5°	0.5	1.4	2.9	3.3	2.9	0.5

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Scaled Data Report



(END OF REPORT)