

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: P776781

Luminaire Tested: HCDJBL54050CSD-HCD82TRH-HCD82TRLWW-5000lm-3000K

Issue Date: 2/13/2024

**Test Information**

Test Method: LM-79-2019  
Report Number: P776781  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA ( A2312156B068)  
Test Lab:  
Issue Date: 2/13/2024  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: HALO COMMERCIAL  
Catalog Number: HCDJBS4050CSD-HCD82TRH-HCD82TRLWW-5000lm-3000K  
Description: 8 INCH ROUND NARROW LENSED WALLWASH KIT  
Light Source: SELECTABLE LUMENS AND CCT ARRAY 90CRI / 3000K CCT  
Ballast/Driver: -

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 5172.3 lumens  
Efficiency: N/A  
Efficacy: 107.8 lumens/watt  
Spacing Criteria (0/90/45): 1.11 / 1.08 / 1.14  
Luminous Opening: Circular (Dia: 0.67' x H: 0')  
CIE Type: Direct

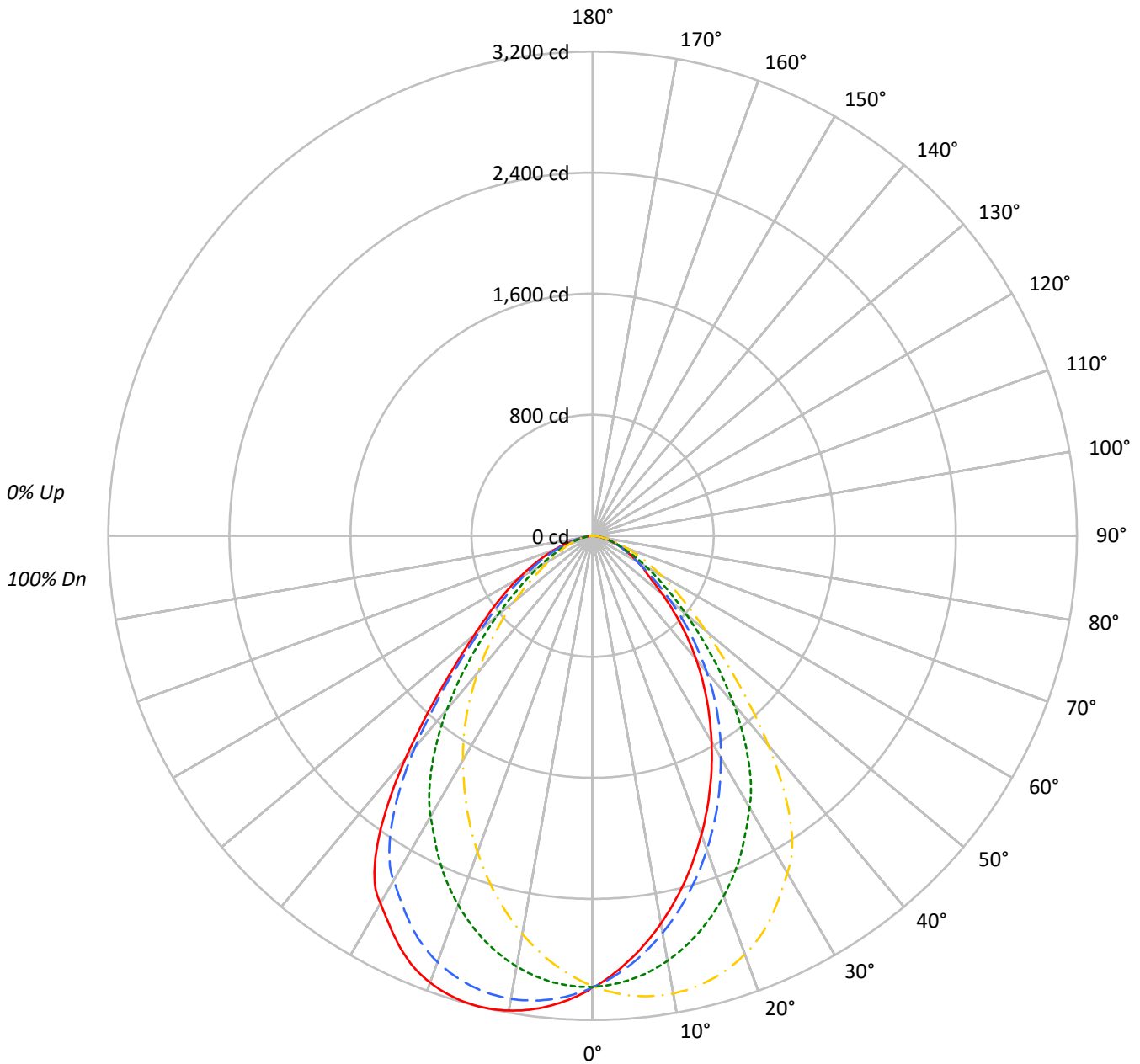
Input Watts (W): 48  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 24 FT



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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	99	96	97	95	93	94	92	91	89								
2	103	96	91	86	101	95	90	85	91	87	83	88	85	82	85	82	80	78								
3	96	87	80	75	93	85	79	74	83	77	73	80	75	72	78	74	71	69								
4	89	79	71	66	87	77	71	65	75	69	64	73	68	64	71	66	63	61								
5	83	72	64	58	81	71	63	58	69	62	57	67	61	57	65	60	56	54								
6	77	66	58	52	75	65	57	52	63	56	52	61	56	51	60	55	51	49								
7	72	60	52	47	71	59	52	47	58	51	47	57	51	46	55	50	46	44								
8	68	56	48	43	66	55	48	43	54	47	42	52	47	42	51	46	42	40								
9	64	51	44	39	62	51	44	39	50	43	39	49	43	39	48	42	39	37								
10	60	48	41	36	59	47	41	36	46	40	36	46	40	36	45	39	35	34								

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

	0°	90°	180°	270°
0°	91078	91078	91078	91078
5°	86243	90175	95487	90801
10°	80644	88409	98779	89603
15°	74615	85760	101033	87435
20°	68319	82329	102102	84350
25°	61869	78082	101231	80275
30°	55411	73165	98879	75506
35°	48884	66737	92297	68917
40°	42349	57681	76732	59678
45°	35465	47602	60240	49169
50°	28622	38287	48546	39123
55°	23468	30888	40954	31085
60°	20907	24992	34750	25047
65°	18060	20206	29062	20105
70°	15639	16130	23477	16005
75°	13424	12822	17871	12657
80°	11112	10285	11516	9881
85°	7812	7812	3433	7146

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 180°  
 Vertical Angle: 45°  
 Luminance: 60240 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	279.9	5.4
10°-20°	775.4	15.0
20°-30°	1095.7	21.2
30°-40°	1151.8	22.3
40°-50°	868.4	16.8
50°-60°	538.3	10.4
60°-70°	302.7	5.9
70°-80°	133.6	2.6
80°-90°	26.5	0.5
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°	2151.0	41.6
0°-40°	3302.8	63.9
0°-60°	4709.5	91.1
0°-90°	5172.3	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	5172.3	100.0

**CANDELA DISTRIBUTION:**

	0°	90°	180°	270°	360°	Flux
0°	2983	2983	2983	2983	2983	
5°	2814	2942	3116	2963	2814	262
15°	2361	2713	3196	2766	2361	661
25°	1837	2318	3005	2383	1837	843
35°	1312	1791	2476	1849	1312	819
45°	821	1102	1395	1139	821	634
55°	441	580	769	584	441	405
65°	250	280	402	278	250	250
75°	114	109	152	107	114	122
85°	22	22	10	20	22	28
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°	2983.2	2983.2	2983.2	2983.2	2983.2	2983.2	2983.2	2983.2	2983.2	2983.2	2983.2
0.5°	2973.5	2974.9	2974.4	2974.4	2979.1	2982.3	2985.6	3000.9	3004.1	3004.1	2997.6
1°	2957.7	2960.0	2962.3	2967.0	2977.2	2986.5	2994.9	3013.9	3018.1	3017.6	3007.9
1.5°	2941.4	2944.2	2949.8	2959.1	2974.9	2990.2	3004.1	3026.5	3032.5	3031.1	3018.6
2°	2924.2	2928.0	2936.3	2950.3	2972.1	2993.5	3012.5	3038.1	3046.0	3043.6	3027.8
2.5°	2907.0	2911.2	2922.8	2941.0	2968.4	2995.8	3019.9	3049.2	3058.5	3055.7	3037.6
3°	2889.4	2894.5	2908.0	2931.7	2964.2	2997.6	3027.4	3059.4	3071.5	3067.3	3045.5
3.5°	2871.3	2877.3	2894.0	2921.4	2960.0	2999.0	3034.3	3070.1	3083.1	3078.5	3053.4
4°	2852.7	2859.2	2878.7	2911.2	2954.4	3000.0	3040.4	3079.4	3094.3	3089.2	3060.8
4.5°	2833.6	2840.6	2862.9	2900.1	2948.9	3000.4	3046.4	3088.7	3105.0	3098.9	3068.3
5°	2814.1	2822.5	2846.6	2888.5	2942.4	3000.0	3051.1	3097.1	3115.7	3108.7	3074.3
5.5°	2794.6	2803.4	2830.9	2876.4	2935.9	2999.5	3055.7	3105.0	3125.4	3117.5	3080.3
6°	2774.6	2783.5	2813.7	2863.4	2928.4	2997.6	3059.9	3112.4	3134.2	3125.9	3085.5
6.5°	2754.2	2763.5	2796.5	2850.4	2920.5	2995.8	3063.2	3118.9	3142.6	3133.8	3090.6
7°	2732.8	2743.5	2778.3	2836.9	2912.6	2993.5	3065.9	3125.4	3151.0	3140.7	3094.3
7.5°	2712.4	2723.5	2760.7	2823.0	2903.3	2990.7	3068.3	3131.0	3158.4	3147.7	3098.0
8°	2690.5	2702.2	2742.1	2808.5	2894.0	2986.5	3070.1	3136.1	3165.4	3153.8	3100.8
8.5°	2668.7	2681.2	2723.5	2793.7	2884.3	2982.8	3071.1	3140.3	3171.4	3159.3	3103.1
9°	2645.9	2659.4	2703.5	2778.3	2873.6	2978.1	3071.5	3144.5	3177.0	3164.0	3105.4
9.5°	2624.1	2637.6	2684.5	2762.6	2862.9	2973.0	3071.5	3147.7	3182.1	3168.2	3106.4
10°	2601.3	2615.3	2664.5	2745.8	2851.8	2967.0	3071.1	3150.0	3186.3	3171.9	3107.3
10.5°	2578.1	2593.0	2644.1	2730.0	2839.7	2960.5	3070.1	3152.4	3190.0	3175.1	3107.3
11°	2554.9	2570.2	2623.2	2712.8	2827.1	2954.0	3068.3	3153.8	3193.2	3177.4	3106.8
11.5°	2531.6	2547.4	2602.7	2695.2	2814.6	2946.5	3066.4	3154.7	3196.0	3179.8	3105.4
12°	2507.9	2523.7	2581.4	2677.1	2801.6	2939.1	3063.6	3154.7	3197.9	3180.7	3104.0
12.5°	2483.3	2500.5	2559.5	2659.4	2787.6	2930.7	3059.9	3154.7	3199.3	3181.6	3101.7
13°	2458.7	2476.4	2537.7	2640.4	2773.7	2921.9	3056.2	3153.8	3200.2	3181.6	3098.9
13.5°	2435.0	2452.2	2515.8	2622.2	2759.8	2912.6	3051.5	3152.4	3200.2	3181.2	3095.7
14°	2410.4	2428.5	2493.5	2602.7	2744.0	2902.9	3046.4	3150.0	3199.7	3179.8	3091.5
14.5°	2385.3	2403.9	2470.8	2583.2	2728.6	2892.2	3040.9	3147.7	3198.4	3177.9	3086.8
15°	2360.7	2379.7	2447.5	2563.2	2713.3	2881.5	3034.8	3144.0	3196.5	3175.6	3081.7
15.5°	2334.7	2354.6	2424.3	2542.8	2697.0	2869.9	3027.8	3140.3	3194.2	3172.8	3076.2
16°	2309.6	2329.5	2401.1	2522.4	2680.3	2858.3	3020.9	3135.6	3190.9	3169.1	3069.7
16.5°	2284.0	2304.5	2377.9	2501.9	2663.1	2845.7	3013.0	3130.5	3187.7	3164.9	3062.7
17°	2258.5	2279.8	2354.6	2480.5	2645.9	2833.2	3004.6	3124.9	3183.0	3159.8	3055.3
17.5°	2232.4	2254.3	2330.0	2459.6	2628.3	2820.2	2995.8	3118.4	3177.9	3154.2	3046.9
18°	2206.4	2228.7	2306.3	2437.3	2610.2	2806.2	2986.5	3111.5	3172.3	3147.7	3038.5
18.5°	2180.4	2202.7	2281.7	2416.0	2591.1	2792.3	2976.3	3103.6	3165.8	3140.7	3029.2
19°	2154.8	2177.1	2257.5	2393.7	2572.5	2777.4	2965.6	3095.2	3158.9	3133.3	3019.0
19.5°	2127.9	2151.1	2232.9	2371.4	2553.5	2762.6	2954.4	3086.4	3151.4	3124.9	3008.3
20°	2102.8	2125.6	2207.8	2349.1	2534.0	2746.8	2942.8	3076.6	3142.6	3115.2	2997.2
20.5°	2075.9	2100.0	2183.2	2325.8	2513.5	2731.0	2930.7	3066.4	3133.3	3105.4	2985.6
21°	2049.8	2074.0	2158.1	2302.6	2493.5	2714.2	2917.3	3055.3	3123.1	3095.2	2972.6



TEST NUMBER: P776781

CATALOG NUMBER: HCDJBL54050CSD-HCD82TRH-HCD82TRLWW-5000lm-3000K

**CANDELA DISTRIBUTION (continued):**

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
22.5°	1969.9	1995.0	2082.4	2232.4	2430.8	2661.3	2875.0	3016.7	3086.8	3057.6	2929.8
23°	1943.5	1969.0	2056.8	2208.3	2409.0	2642.7	2859.2	3001.8	3072.9	3043.2	2914.0
23.5°	1917.0	1942.1	2030.8	2184.1	2386.7	2623.6	2842.5	2986.5	3057.6	3027.8	2897.3
24°	1890.5	1916.0	2006.2	2160.0	2364.4	2603.7	2825.3	2968.8	3041.3	3010.7	2879.2
24.5°	1863.5	1889.6	1979.7	2135.3	2341.6	2582.8	2806.7	2950.7	3023.7	2993.0	2860.1
25°	1836.6	1863.1	1954.1	2110.2	2317.9	2561.4	2787.2	2931.7	3005.1	2973.9	2840.1
25.5°	1810.1	1836.1	1928.1	2085.2	2293.3	2538.6	2766.7	2912.6	2986.0	2955.4	2819.7
26°	1783.6	1810.6	1902.1	2060.1	2269.6	2515.8	2745.8	2891.7	2966.5	2934.5	2798.3
26.5°	1757.1	1784.1	1876.1	2035.0	2244.5	2492.2	2724.0	2870.8	2946.5	2914.5	2777.4
27°	1731.1	1757.6	1850.5	2009.4	2219.4	2469.4	2702.6	2850.4	2926.1	2894.5	2755.6
27.5°	1704.2	1731.1	1824.5	1983.4	2195.3	2446.2	2680.8	2830.4	2905.7	2873.6	2734.2
28°	1677.2	1705.1	1798.0	1957.9	2170.6	2422.9	2659.4	2809.0	2884.7	2852.7	2712.8
28.5°	1650.3	1678.2	1772.0	1932.3	2146.5	2399.2	2636.6	2788.6	2864.8	2832.7	2691.9
29°	1624.3	1652.1	1746.9	1907.2	2122.3	2376.5	2615.3	2767.7	2843.9	2811.8	2670.1
29.5°	1598.2	1625.7	1720.9	1882.1	2098.6	2353.7	2593.4	2747.7	2823.9	2791.4	2649.2
30°	1571.8	1599.6	1694.9	1858.0	2075.4	2331.4	2572.5	2728.2	2804.8	2772.3	2629.7
30.5°	1544.8	1573.6	1669.3	1832.9	2051.2	2309.1	2552.1	2709.6	2786.7	2754.2	2610.2
31°	1518.8	1547.6	1644.7	1808.7	2027.5	2287.3	2532.6	2689.1	2766.7	2733.3	2587.9
31.5°	1492.8	1521.6	1619.6	1783.2	2001.5	2262.2	2509.3	2664.1	2743.0	2709.1	2562.3
32°	1466.8	1496.0	1594.1	1758.1	1974.6	2235.7	2483.3	2635.3	2715.2	2680.8	2532.6
32.5°	1439.8	1469.6	1569.0	1731.1	1945.8	2205.5	2454.1	2604.6	2683.6	2648.7	2501.0
33°	1414.3	1444.5	1543.0	1705.1	1916.5	2174.8	2422.5	2568.8	2647.8	2613.4	2467.1
33.5°	1389.2	1419.4	1517.9	1677.2	1885.4	2141.4	2387.6	2531.2	2609.2	2575.3	2429.9
34°	1363.2	1393.8	1491.4	1648.4	1854.2	2107.5	2351.4	2489.4	2567.4	2534.9	2391.8
34.5°	1337.6	1368.7	1464.9	1620.1	1822.7	2072.1	2312.3	2446.6	2523.3	2491.7	2351.8
35°	1311.6	1343.2	1438.4	1591.7	1790.6	2035.0	2272.4	2399.7	2476.4	2445.2	2311.0
35.5°	1286.0	1317.6	1411.9	1562.5	1757.1	1998.3	2229.6	2351.8	2426.6	2398.8	2267.7
36°	1261.4	1292.1	1385.5	1533.2	1724.2	1960.6	2186.9	2301.7	2375.1	2349.1	2222.2
36.5°	1235.9	1267.0	1359.0	1503.5	1689.8	1921.6	2143.2	2251.5	2322.1	2297.5	2175.8
37°	1211.2	1241.9	1332.5	1474.7	1655.9	1881.7	2095.8	2197.6	2267.7	2244.5	2128.8
37.5°	1185.7	1216.3	1305.1	1444.9	1621.5	1842.2	2049.4	2143.7	2212.5	2189.7	2080.0
38°	1161.1	1191.3	1278.6	1414.7	1586.2	1801.3	2000.6	2089.8	2156.2	2134.9	2030.8
38.5°	1136.0	1165.2	1251.7	1384.1	1551.8	1761.3	1952.3	2037.8	2099.6	2079.6	1980.2
39°	1111.3	1140.6	1224.7	1354.3	1518.3	1720.0	1904.0	1981.1	2041.0	2023.4	1929.5
39.5°	1087.2	1115.5	1198.2	1324.6	1483.0	1678.2	1854.7	1926.7	1982.9	1965.8	1878.4
40°	1062.6	1090.4	1170.3	1294.4	1447.3	1636.3	1805.5	1871.0	1925.3	1909.1	1826.8
40.5°	1037.9	1065.3	1143.9	1263.3	1412.4	1595.0	1755.3	1818.0	1867.3	1852.9	1774.8
41°	1013.8	1040.7	1116.9	1233.5	1377.1	1553.2	1707.0	1763.2	1811.5	1797.1	1723.7
41.5°	989.1	1016.1	1090.9	1203.8	1342.7	1510.9	1658.6	1708.8	1753.9	1741.3	1672.6
42°	964.5	991.5	1064.4	1174.1	1307.4	1469.6	1610.8	1656.8	1699.5	1686.1	1622.4
42.5°	940.8	967.3	1037.9	1145.3	1272.6	1428.2	1563.9	1605.7	1645.2	1632.2	1572.7
43°	916.7	943.2	1012.8	1116.0	1238.2	1388.2	1516.5	1555.5	1592.2	1580.6	1523.4
43.5°	893.0	919.0	987.3	1087.2	1203.3	1347.8	1470.5	1506.3	1540.2	1528.1	1474.7



TEST NUMBER: P776781

CATALOG NUMBER: HCDJBL54050CSD-HCD82TRH-HCD82TRLWW-5000lm-3000K

**CANDELA DISTRIBUTION (continued):**

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
45°	821.4	847.9	911.6	1001.7	1102.5	1230.3	1339.0	1366.4	1395.2	1384.5	1338.1
45.5°	798.2	823.7	886.9	974.3	1070.0	1193.1	1297.2	1323.2	1350.1	1338.5	1293.9
46°	775.4	801.0	862.3	947.3	1037.9	1156.9	1256.8	1280.9	1306.9	1295.8	1251.2
46.5°	753.1	778.7	839.1	920.4	1006.8	1120.2	1217.3	1239.6	1265.1	1253.5	1209.8
47°	730.4	755.5	814.5	892.5	975.7	1084.4	1178.7	1201.5	1225.6	1213.6	1171.3
47.5°	708.1	734.1	790.8	867.4	945.5	1050.5	1141.5	1164.3	1188.5	1175.5	1133.2
48°	686.2	712.2	767.5	840.9	916.7	1018.4	1105.8	1128.5	1152.2	1139.7	1096.5
48.5°	664.9	690.9	744.3	815.4	888.8	985.9	1071.8	1094.1	1116.9	1103.9	1060.7
49°	643.0	670.4	722.0	790.3	860.5	953.8	1037.9	1061.6	1084.9	1071.4	1027.7
49.5°	623.5	650.0	699.2	766.1	832.6	924.6	1006.3	1029.6	1052.8	1037.9	994.3
50°	602.6	629.5	677.4	741.5	806.1	895.3	975.2	999.4	1022.1	1007.7	963.1
50.5°	582.6	610.5	655.6	717.4	780.5	866.5	944.5	969.6	992.4	977.5	932.9
51°	563.6	590.5	634.7	694.1	755.5	838.6	915.7	941.8	964.1	948.7	904.1
51.5°	545.4	571.9	613.7	671.8	731.3	812.1	888.3	914.3	937.1	921.8	876.2
52°	527.3	552.9	592.8	650.0	707.6	786.1	860.9	888.8	910.6	894.8	849.3
52.5°	510.1	535.2	573.3	628.1	684.8	762.0	834.9	862.8	885.5	868.8	822.8
53°	494.3	517.6	553.8	606.8	662.5	737.3	809.3	838.6	860.9	844.2	797.7
53.5°	479.0	500.4	534.8	586.3	641.2	713.6	785.2	814.9	837.2	820.0	773.1
54°	465.1	483.7	516.2	566.4	620.3	690.4	761.5	791.7	814.5	796.8	750.3
54.5°	452.5	467.9	498.1	547.8	600.3	669.0	738.3	769.4	791.7	774.0	727.6
55°	440.9	453.0	480.9	528.7	580.3	647.2	716.4	747.6	769.4	752.2	705.3
55.5°	430.2	438.1	464.1	511.1	561.2	626.3	695.1	726.2	748.0	730.8	683.9
56°	420.5	424.7	447.9	492.9	542.2	606.3	673.7	705.7	726.6	710.4	663.0
56.5°	413.0	411.6	432.5	476.2	524.1	586.3	653.2	685.3	705.7	689.0	642.6
57°	404.2	399.6	417.2	459.5	506.0	566.8	633.3	665.3	685.3	669.0	623.0
57.5°	394.0	388.4	402.8	443.2	488.8	548.2	613.7	646.3	665.3	650.0	604.0
58°	383.8	379.1	388.9	427.4	472.0	530.6	594.7	626.8	645.3	630.9	585.4
58.5°	373.5	369.8	375.4	412.6	455.8	512.9	576.6	607.7	625.4	611.4	566.4
59°	363.3	360.5	362.4	397.7	440.0	495.7	558.0	589.1	606.3	592.4	548.7
59.5°	352.6	350.8	350.3	383.3	424.7	479.0	540.3	570.5	587.3	573.8	531.0
60°	342.4	341.5	338.2	369.4	409.3	462.7	523.1	552.9	569.1	556.1	513.9
60.5°	332.2	331.7	327.1	355.9	395.4	447.4	505.5	535.2	550.6	538.0	497.1
61°	322.4	322.0	315.9	342.4	381.4	431.6	488.8	518.0	532.9	520.8	480.4
61.5°	312.7	312.7	305.2	329.9	367.0	416.3	472.5	500.8	515.2	504.1	464.6
62°	303.4	303.4	295.5	317.3	353.1	402.3	457.2	484.1	498.1	487.8	448.8
62.5°	293.6	294.1	285.7	305.2	340.6	387.9	441.4	467.4	481.3	470.2	433.5
63°	284.8	285.3	276.4	293.6	327.5	374.0	426.0	451.6	464.6	454.4	418.6
63.5°	275.5	276.4	267.6	282.5	315.0	360.1	411.2	436.3	448.3	438.6	404.2
64°	267.1	267.6	259.7	271.8	302.9	346.1	396.8	420.5	432.5	423.3	389.8
64.5°	258.3	259.3	251.8	261.6	290.8	333.1	382.4	406.1	417.2	408.4	375.9
65°	250.0	251.4	244.4	251.4	279.7	320.6	368.0	391.7	402.3	394.0	361.5
65.5°	242.1	243.0	236.9	241.6	268.5	308.0	354.0	377.3	387.5	379.6	347.1
66°	233.7	235.1	229.5	232.3	257.4	295.5	341.0	362.9	373.1	365.2	334.1





TEST NUMBER: P776781

CATALOG NUMBER: HCDJBL54050CSD-HCD82TRH-HCD82TRLWW-5000lm-3000K

**CANDELA DISTRIBUTION (continued):**

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
67.5°	210.5	212.3	207.7	205.8	226.7	261.1	302.5	321.0	328.9	322.9	295.5
68°	203.5	204.9	201.2	197.9	216.5	250.0	289.9	307.6	315.0	309.4	282.9
68.5°	196.1	197.5	194.2	190.0	207.2	239.3	277.4	295.0	302.0	296.9	271.3
69°	189.1	190.5	187.2	182.6	198.4	228.6	265.8	282.0	288.5	283.9	259.3
69.5°	181.7	183.5	180.7	175.2	189.6	218.8	254.1	269.9	276.0	271.3	248.1
70°	175.2	176.6	174.2	167.7	180.7	209.1	243.0	257.9	263.0	259.3	236.9
70.5°	168.2	170.0	167.3	161.2	172.8	199.3	231.8	246.2	250.9	248.1	226.3
71°	161.7	163.5	161.2	155.2	164.5	190.0	221.6	234.6	238.8	236.0	215.1
71.5°	155.6	157.5	155.6	149.1	157.0	180.7	210.9	223.9	227.2	224.9	204.9
72°	149.6	151.5	149.6	143.1	149.1	171.9	200.7	212.3	215.1	213.7	194.7
72.5°	143.1	145.0	144.0	136.6	141.7	163.5	190.5	202.1	204.0	202.6	184.4
73°	137.1	138.9	138.0	131.0	134.7	155.2	180.7	191.4	192.8	192.3	174.7
73.5°	131.0	132.9	131.9	125.4	127.8	146.8	171.0	181.2	182.1	182.1	165.9
74°	125.4	126.8	126.4	120.3	121.3	138.9	162.1	171.4	171.9	172.4	156.6
74.5°	119.4	121.3	120.8	114.8	114.8	131.5	152.9	162.1	161.2	162.6	147.3
75°	113.8	115.7	115.7	109.6	108.7	124.1	144.0	152.4	151.5	152.9	138.9
75.5°	108.3	110.1	110.1	105.0	103.1	117.1	135.7	143.6	141.7	144.0	130.6
76°	103.1	104.5	105.0	99.9	97.1	110.1	127.3	134.7	131.9	135.2	122.2
76.5°	97.6	99.4	99.9	95.2	92.0	103.1	119.4	125.9	122.7	126.4	114.3
77°	92.5	93.9	94.8	90.6	86.4	97.1	112.0	117.5	113.8	118.0	106.9
77.5°	87.3	88.7	89.7	86.0	81.3	90.6	104.1	109.6	105.0	110.1	99.4
78°	82.2	84.1	85.0	81.3	76.7	85.0	97.1	101.7	96.6	102.2	92.0
78.5°	77.6	79.0	79.9	77.1	71.5	79.0	90.1	94.3	88.3	94.3	85.5
79°	72.5	74.3	75.3	72.5	67.4	73.4	83.2	86.9	80.4	87.3	78.5
79.5°	67.8	69.7	70.6	68.3	62.7	68.3	76.7	79.9	72.9	79.9	72.5
80°	63.2	64.6	66.0	64.1	58.5	63.2	70.2	72.9	65.5	73.4	66.0
80.5°	59.0	59.9	61.8	59.9	54.4	58.1	64.6	66.0	58.5	66.4	59.9
81°	54.4	55.8	57.6	56.2	50.2	53.4	58.5	59.5	51.6	59.9	54.4
81.5°	50.2	51.6	53.4	52.0	46.5	48.8	53.0	53.0	45.5	53.9	48.8
82°	46.0	46.9	49.2	48.3	42.7	44.1	47.9	47.4	39.5	48.3	44.1
82.5°	41.8	42.7	45.1	44.1	39.0	40.4	43.2	41.8	33.9	42.7	39.5
83°	37.6	39.0	41.4	40.4	35.8	36.7	38.6	36.2	27.9	37.2	34.4
83.5°	33.5	34.8	37.2	37.2	32.5	32.5	33.9	30.7	21.8	31.6	29.7
84°	29.7	30.7	33.5	33.5	28.8	28.8	29.3	25.1	17.2	26.0	25.1
84.5°	26.0	26.9	29.7	29.7	25.6	25.1	24.6	20.0	13.0	20.4	21.4
85°	22.3	23.2	26.0	26.5	22.3	21.8	20.9	15.8	9.8	15.8	17.7
85.5°	18.6	19.0	22.8	22.8	19.0	18.6	17.7	12.5	7.4	12.5	14.4
86°	15.8	16.7	19.5	19.5	16.3	15.3	14.4	9.3	6.0	9.3	11.2
86.5°	13.0	13.9	16.3	16.7	13.5	12.5	11.2	6.5	4.6	6.5	8.4
87°	10.2	11.2	13.5	13.5	10.7	9.8	8.4	4.2	3.3	4.2	6.0
87.5°	7.4	8.4	10.7	10.7	7.9	7.0	6.0	2.3	2.3	2.3	3.7
88°	5.1	6.0	7.9	7.4	5.6	4.6	3.7	0.9	0.9	0.9	1.9
88.5°	3.3	3.7	4.6	4.6	2.8	2.3	1.9	0.5	0.5	0.5	0.5



TEST NUMBER: P776781

CATALOG NUMBER: HCDJBL54050CSD-HCD82TRH-HCD82TRLWW-5000lm-3000K

**CANDELA DISTRIBUTION (continued):**

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



TEST NUMBER: P776781

CATALOG NUMBER: HCDJBL54050CSD-HCD82TRH-HCD82TRLWW-5000lm-3000K

**CANDELA DISTRIBUTION (continued):**

	247.5°	270°	292.5°	315°	337.5°	360°
0°	2983.2	2983.2	2983.2	2983.2	2983.2	2983.2
0.5°	2987.9	2981.4	2972.6	2964.7	2973.9	2973.5
1°	2993.5	2981.4	2966.5	2954.0	2959.5	2957.7
1.5°	2998.6	2981.4	2960.0	2942.4	2944.7	2941.4
2°	3003.7	2980.0	2953.0	2929.8	2929.3	2924.2
2.5°	3007.9	2978.6	2945.1	2916.8	2913.6	2907.0
3°	3011.6	2976.3	2937.2	2904.3	2897.3	2889.4
3.5°	3014.4	2973.5	2928.4	2890.8	2881.0	2871.3
4°	3017.2	2970.7	2919.6	2876.8	2863.8	2852.7
4.5°	3019.0	2967.0	2909.8	2862.0	2846.2	2833.6
5°	3019.9	2962.8	2900.1	2846.6	2828.5	2814.1
5.5°	3020.9	2958.2	2888.9	2831.3	2809.9	2794.6
6°	3021.3	2952.6	2878.2	2815.5	2791.4	2774.6
6.5°	3020.9	2946.5	2866.6	2798.8	2772.3	2754.2
7°	3019.9	2940.5	2854.1	2782.5	2752.3	2732.8
7.5°	3018.6	2933.1	2841.5	2764.4	2732.8	2712.4
8°	3016.7	2925.6	2828.5	2747.2	2712.4	2690.5
8.5°	3014.4	2917.7	2814.6	2728.6	2691.9	2668.7
9°	3011.1	2908.9	2800.2	2710.5	2670.6	2645.9
9.5°	3007.4	2899.6	2785.3	2691.0	2649.2	2624.1
10°	3003.2	2890.3	2770.5	2672.4	2627.8	2601.3
10.5°	2998.6	2880.1	2755.1	2652.4	2606.0	2578.1
11°	2993.0	2868.9	2739.3	2632.9	2583.7	2554.9
11.5°	2987.4	2857.8	2722.6	2612.0	2560.9	2531.6
12°	2980.5	2846.2	2705.9	2591.6	2538.1	2507.9
12.5°	2973.9	2834.1	2688.7	2570.7	2514.9	2483.3
13°	2966.1	2821.6	2671.5	2549.3	2491.7	2458.7
13.5°	2958.2	2808.5	2653.4	2527.9	2468.5	2435.0
14°	2949.3	2795.1	2634.8	2505.6	2444.3	2410.4
14.5°	2940.5	2781.1	2615.7	2483.3	2420.6	2385.3
15°	2930.7	2766.3	2597.2	2461.5	2396.0	2360.7
15.5°	2920.5	2751.4	2577.2	2437.8	2371.4	2334.7
16°	2909.8	2735.6	2557.7	2415.0	2346.7	2309.6
16.5°	2898.7	2720.3	2537.7	2391.3	2321.6	2284.0
17°	2886.6	2703.5	2516.8	2368.6	2297.0	2258.5
17.5°	2874.5	2686.8	2496.3	2345.3	2271.9	2232.4
18°	2861.5	2669.6	2475.0	2320.7	2246.8	2206.4
18.5°	2848.5	2652.0	2453.6	2296.6	2221.3	2180.4
19°	2834.1	2633.9	2431.8	2272.9	2195.3	2154.8
19.5°	2819.7	2615.7	2409.9	2248.7	2169.7	2127.9
20°	2804.8	2596.2	2387.6	2224.1	2144.2	2102.8
20.5°	2789.0	2577.6	2365.3	2199.0	2118.6	2075.9
21°	2773.2	2557.7	2342.1	2174.4	2092.6	2049.8

TEST NUMBER: P776781

CATALOG NUMBER: HCDJBL54050CSD-HCD82TRH-HCD82TRLWW-5000lm-3000K

**CANDELA DISTRIBUTION (continued):**

	247.5°	270°	292.5°	315°	337.5°	360°
22.5°	2721.7	2496.3	2272.4	2099.1	2014.5	1969.9
23°	2703.1	2474.5	2248.2	2073.5	1987.6	1943.5
23.5°	2683.1	2452.7	2224.1	2048.5	1962.0	1917.0
24°	2663.1	2430.4	2199.4	2022.0	1936.0	1890.5
24.5°	2641.8	2407.1	2174.8	1997.3	1909.1	1863.5
25°	2619.5	2383.0	2149.7	1970.9	1882.6	1836.6
25.5°	2597.2	2359.3	2124.6	1944.8	1856.6	1810.1
26°	2573.9	2335.1	2099.1	1919.3	1830.1	1783.6
26.5°	2551.2	2310.0	2073.5	1893.7	1803.6	1757.1
27°	2528.4	2284.9	2047.5	1867.3	1777.6	1731.1
27.5°	2505.2	2260.8	2022.0	1840.8	1750.6	1704.2
28°	2481.9	2236.6	1996.4	1814.8	1724.6	1677.2
28.5°	2459.2	2212.0	1971.8	1789.7	1697.7	1650.3
29°	2436.9	2188.3	1946.7	1763.6	1672.1	1624.3
29.5°	2415.0	2165.1	1922.5	1738.6	1645.6	1598.2
30°	2393.7	2141.8	1897.9	1712.5	1619.6	1571.8
30.5°	2371.4	2118.6	1872.8	1687.5	1593.6	1544.8
31°	2346.3	2093.5	1847.3	1662.4	1568.0	1518.8
31.5°	2319.8	2067.5	1822.2	1636.8	1542.0	1492.8
32°	2290.0	2038.7	1795.2	1611.3	1516.0	1466.8
32.5°	2258.5	2009.0	1767.8	1585.2	1490.0	1439.8
33°	2225.0	1979.2	1740.0	1559.2	1464.9	1414.3
33.5°	2190.6	1947.2	1711.6	1533.2	1439.4	1389.2
34°	2154.8	1915.1	1682.3	1506.7	1413.8	1363.2
34.5°	2118.6	1882.6	1652.6	1479.8	1388.2	1337.6
35°	2081.4	1849.1	1622.9	1452.8	1363.2	1311.6
35.5°	2042.9	1815.7	1593.1	1425.4	1337.1	1286.0
36°	2003.8	1781.3	1562.9	1398.9	1312.1	1261.4
36.5°	1963.4	1747.4	1532.7	1371.5	1286.5	1235.9
37°	1922.5	1712.1	1501.6	1343.6	1260.9	1211.2
37.5°	1881.2	1677.2	1471.4	1316.2	1235.4	1185.7
38°	1839.4	1641.0	1440.3	1288.8	1209.8	1161.1
38.5°	1797.6	1605.7	1409.6	1261.4	1184.3	1136.0
39°	1755.3	1569.4	1379.4	1234.5	1158.7	1111.3
39.5°	1712.5	1533.7	1347.8	1207.0	1133.6	1087.2
40°	1667.9	1497.4	1317.2	1179.6	1108.6	1062.6
40.5°	1624.3	1460.7	1286.5	1152.7	1083.0	1037.9
41°	1581.5	1424.0	1255.8	1125.7	1057.9	1013.8
41.5°	1537.8	1387.8	1225.2	1098.3	1032.4	989.1
42°	1494.6	1352.0	1195.0	1072.3	1007.7	964.5
42.5°	1450.5	1314.8	1165.2	1046.3	983.1	940.8
43°	1407.8	1279.5	1135.0	1019.3	958.9	916.7
43.5°	1365.5	1243.8	1104.4	992.9	934.8	893.0

TEST NUMBER: P776781

CATALOG NUMBER: HCDJBL54050CSD-HCD82TRH-HCD82TRLWW-5000lm-3000K

**CANDELA DISTRIBUTION (continued):**

	247.5°	270°	292.5°	315°	337.5°	360°
45°	1242.8	1138.8	1016.6	915.7	861.8	821.4
45.5°	1202.4	1103.9	987.3	890.2	838.6	798.2
46°	1164.8	1070.5	958.9	865.6	814.9	775.4
46.5°	1125.7	1037.0	930.6	840.9	792.2	753.1
47°	1089.0	1004.9	902.7	815.8	769.4	730.4
47.5°	1053.3	972.4	874.9	791.2	747.1	708.1
48°	1019.3	941.3	848.4	767.5	725.3	686.2
48.5°	985.0	910.6	821.4	743.4	703.0	664.9
49°	952.0	881.4	795.4	720.6	682.0	643.0
49.5°	920.9	852.6	769.4	697.4	661.1	623.5
50°	890.7	823.7	744.3	674.6	640.2	602.6
50.5°	860.5	795.9	719.2	651.8	620.3	582.6
51°	832.6	769.4	695.5	630.5	599.3	563.6
51.5°	805.6	743.8	671.8	608.6	580.3	545.4
52°	779.1	718.7	649.1	588.7	561.2	527.3
52.5°	753.1	694.6	626.8	567.7	542.2	510.1
53°	728.5	670.9	604.9	547.8	523.6	494.3
53.5°	704.3	648.1	584.0	528.3	505.5	479.0
54°	682.0	626.3	563.1	509.7	487.8	465.1
54.5°	659.7	605.4	543.6	491.1	471.1	452.5
55°	637.9	584.0	524.5	473.4	455.3	440.9
55.5°	617.5	564.5	506.0	456.2	440.0	430.2
56°	597.0	545.4	487.8	440.0	425.1	420.5
56.5°	577.5	526.4	470.2	424.2	411.2	413.0
57°	558.5	507.8	453.5	408.4	398.6	404.2
57.5°	539.9	490.6	437.2	394.0	386.1	394.0
58°	522.2	473.9	421.4	380.0	374.9	383.8
58.5°	504.6	457.2	406.1	366.6	364.7	373.5
59°	487.4	440.4	391.2	353.6	355.4	363.3
59.5°	471.1	425.6	376.8	340.6	346.6	352.6
60°	454.9	410.2	362.9	328.9	337.3	342.4
60.5°	439.1	395.4	349.4	317.3	328.0	332.2
61°	423.7	380.0	336.4	306.2	318.7	322.4
61.5°	409.3	366.6	323.4	295.5	309.4	312.7
62°	394.9	353.1	310.8	285.7	300.6	303.4
62.5°	381.0	340.1	299.2	275.5	291.3	293.6
63°	366.6	326.6	287.6	266.2	282.5	284.8
63.5°	352.6	314.1	276.4	257.4	274.1	275.5
64°	339.2	302.0	265.3	248.6	265.3	267.1
64.5°	326.6	289.9	255.1	240.2	257.4	258.3
65°	313.1	278.3	244.8	232.8	249.0	250.0
65.5°	301.1	267.1	235.1	225.3	241.1	242.1
66°	289.0	256.0	225.8	218.4	233.2	233.7



TEST NUMBER: P776781

CATALOG NUMBER: HCDJBL54050CSD-HCD82TRH-HCD82TRLWW-5000lm-3000K

**CANDELA DISTRIBUTION (continued):**

	247.5°	270°	292.5°	315°	337.5°	360°
67.5°	254.6	225.3	199.3	197.5	210.0	210.5
68°	243.9	215.6	191.0	191.0	203.0	203.5
68.5°	233.2	205.8	183.1	184.4	195.6	196.1
69°	223.0	197.0	175.6	177.5	189.1	189.1
69.5°	212.8	188.2	168.2	171.4	182.1	181.7
70°	203.0	179.3	161.7	165.4	175.2	175.2
70.5°	193.3	171.0	155.2	159.4	168.7	168.2
71°	184.0	163.5	148.7	153.8	162.6	161.7
71.5°	175.2	156.1	142.2	147.7	156.1	155.6
72°	166.3	148.7	135.2	141.7	150.1	149.6
72.5°	158.0	141.2	129.6	135.7	144.0	143.1
73°	149.6	133.3	123.6	130.1	138.0	137.1
73.5°	141.7	126.8	118.0	124.5	131.9	131.0
74°	133.8	119.9	112.9	119.4	125.9	125.4
74.5°	126.4	113.4	107.3	113.8	120.3	119.4
75°	118.9	107.3	102.2	108.3	114.8	113.8
75.5°	112.0	101.3	97.6	103.1	109.2	108.3
76°	105.0	95.7	92.5	98.0	103.6	103.1
76.5°	98.5	90.1	87.8	93.4	98.5	97.6
77°	92.5	84.6	83.2	88.3	93.4	92.5
77.5°	86.4	79.4	79.0	83.6	87.8	87.3
78°	80.4	74.3	74.8	79.0	83.2	82.2
78.5°	74.8	69.7	70.2	74.3	78.1	77.6
79°	69.2	65.0	66.4	69.7	73.4	72.5
79.5°	64.1	60.4	62.3	65.5	68.8	67.8
80°	58.5	56.2	58.1	60.9	64.1	63.2
80.5°	53.9	52.0	54.4	56.7	59.5	59.0
81°	49.2	47.9	50.6	52.5	55.3	54.4
81.5°	44.6	44.1	46.5	48.3	50.6	50.2
82°	40.9	40.4	42.7	44.6	46.5	46.0
82.5°	36.7	36.7	39.0	40.4	42.3	41.8
83°	33.0	33.0	35.8	36.7	38.1	37.6
83.5°	28.8	29.7	32.1	33.0	34.4	33.5
84°	25.1	26.5	28.8	29.3	30.2	29.7
84.5°	21.4	23.2	25.6	26.0	26.5	26.0
85°	18.1	20.4	22.3	22.8	22.8	22.3
85.5°	14.9	17.2	19.0	19.5	19.0	18.6
86°	12.1	14.4	15.8	16.3	16.3	15.8
86.5°	9.3	11.6	13.0	13.5	13.9	13.0
87°	7.0	8.8	10.2	10.7	11.2	10.2
87.5°	4.2	6.5	7.4	7.4	8.4	7.4
88°	2.3	3.7	4.2	4.6	6.0	5.1
88.5°	0.5	1.4	1.9	2.3	3.7	3.3



TEST NUMBER: P776781

CATALOG NUMBER: HCDJBL54050CSD-HCD82TRH-HCD82TRLWW-5000lm-3000K

**CANDELA DISTRIBUTION (continued):**

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



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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°	2022.9	2047.5	2132.1	2279.4	2473.1	2697.0	2903.8	3043.2	3111.9	3083.1	2958.6
22°	1996.4	2021.0	2107.5	2256.1	2452.2	2679.4	2889.9	3030.2	3099.9	3071.1	2944.7



44°	868.8	894.8	962.2	1057.4	1169.4	1307.9	1425.9	1457.9	1489.5	1478.8	1427.3
44.5°	845.1	871.1	936.6	1030.5	1136.0	1268.4	1382.2	1411.5	1441.7	1429.6	1381.7



66.5°	225.8	227.2	222.1	223.0	246.7	283.4	328.0	348.5	358.2	350.8	321.0
67°	218.4	219.8	215.1	214.2	236.5	272.3	315.0	334.5	343.3	336.4	308.0



89°	1.4	1.9	2.3	1.9	0.9	0.5	0.5	0.0	0.0	0.0	0.0
89.5°	0.5	0.5	0.5	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0



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21.5°	2756.0	2537.7	2319.3	2149.3	2066.6	2022.9
22°	2738.9	2516.3	2295.6	2124.2	2040.6	1996.4



44°	1323.7	1208.0	1075.1	967.3	909.7	868.8
44.5°	1283.2	1172.7	1045.8	941.3	886.0	845.1



66.5°	277.4	245.8	216.5	211.4	225.3	225.8
67°	265.8	235.6	207.7	204.4	217.9	218.4

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Scaled Data Report



89°	0.0	0.5	0.5	0.5	1.9	1.4
89.5°	0.0	0.0	0.0	0.0	0.5	0.5

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Scaled Data Report



(END OF REPORT)