

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: P776640

Luminaire Tested: HCDJBS4050CSD-HCD4TSQMW-5000lm-2700K

Issue Date: 2/7/2024

**Test Information**

Test Method: LM-79-2019  
Report Number: P776640  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA ( A2310613A001)  
Test Lab:  
Issue Date: 2/7/2024  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: HALO COMMERCIAL  
Catalog Number: HCDJBS4050CSD-HCD4TSQMW-5000lm-2700K  
Description: 4 INCH SQUARE MEDIUM MATTE WHITE TRIM  
Light Source: SELECTABLE LUMENS AND CCT ARRAY 90CRI / 2700K CCT  
Ballast/Driver: -

**Summary**

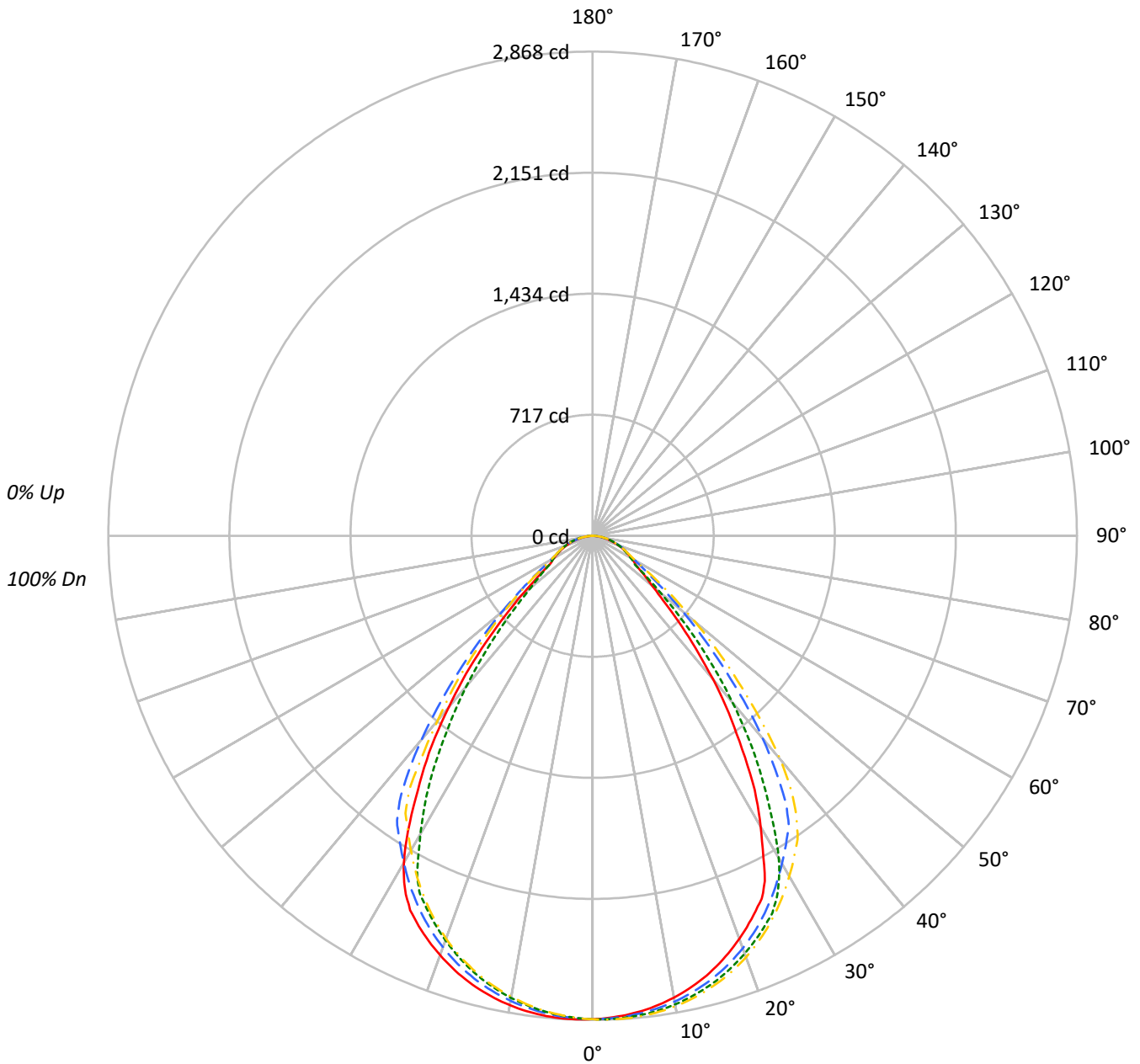
Lumens per Lamp: N/A  
Luminaire Lumens: 4735.5 lumens  
Efficiency: N/A  
Efficacy: 98.7 lumens/watt  
Spacing Criteria (0/90/45): 1.12 / 1.13 / 1.17  
Luminous Opening: Rectangular (W 0.33' x L: 0.33' x H: 0')  
CIE Type: Direct

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



TEST NUMBER: P776640  
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### Luminous Intensity Polar Plot





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

RF	20									20									20									20									
RC	80									50									30									10									0
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	50	30	10	0																
RCR																																					
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100																			
1	111	108	104	101	109	106	103	100	101	99	97	98	96	94	94	93	91	89																			
2	104	97	92	88	101	96	91	86	92	88	85	89	86	83	86	83	81	79																			
3	97	88	82	77	94	87	81	76	84	79	75	81	77	73	79	75	72	70																			
4	90	80	73	68	88	79	72	67	77	71	66	75	70	66	73	68	65	63																			
5	84	73	66	61	82	72	65	60	70	64	60	69	63	59	67	62	58	57																			
6	79	67	60	55	77	67	59	54	65	59	54	63	58	53	62	57	53	51																			
7	74	62	55	49	72	61	54	49	60	54	49	59	53	49	57	52	48	47																			
8	69	58	50	45	68	57	50	45	56	49	45	55	49	45	53	48	44	43																			
9	65	53	46	41	64	53	46	41	52	46	41	51	45	41	50	45	41	39																			
10	61	50	43	38	60	49	43	38	48	42	38	48	42	38	47	41	38	36																			

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

	0°	90°	180°	270°
0°	283035	283035	283035	283035
5°	281536	283481	283759	281675
10°	278759	282874	283376	279030
15°	274180	280842	281640	274692
20°	267161	276985	277995	268171
25°	258615	271680	272476	259662
30°	227102	251447	255190	232717
35°	186317	210728	215301	193412
40°	142900	166190	171183	149958
45°	100463	120592	125442	106963
50°	71058	80730	84866	73579
55°	56230	55523	58832	57419
60°	52703	51082	51991	52624
65°	49676	49021	49349	50846
70°	45835	47020	46499	49274
75°	41245	44567	42811	47508
80°	32673	41268	37112	44626
85°	15991	33569	22228	39239

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 135°  
 Vertical Angle: 45°  
 Luminance: 169656 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	270.3	5.7
10°-20°	764.9	16.2
20°-30°	1114.9	23.5
30°-40°	1121.4	23.7
40°-50°	735.2	15.5
50°-60°	356.3	7.5
60°-70°	216.5	4.6
70°-80°	124.7	2.6
80°-90°	31.3	0.7
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°	2150.1	45.4
0°-40°	3271.5	69.1
0°-60°	4363.0	92.1
0°-90°	4735.5	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4735.5	100.0

**CANDELA DISTRIBUTION:**

	0°	90°	180°	270°	360°	Flux
0°	2864	2864	2864	2864	2864	
5°	2838	2857	2860	2839	2838	269
15°	2679	2744	2752	2684	2679	754
25°	2371	2491	2498	2381	2371	1068
35°	1544	1746	1784	1603	1544	963
45°	719	863	897	765	719	566
55°	326	322	341	333	326	305
65°	212	210	211	217	212	210
75°	108	117	112	124	108	114
85°	14	30	20	35	14	21
90°	0	0	0	0	0	



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CATALOG NUMBER: HCDJBL54050CSD-HCD4TSQMW-5000lm-2700K

**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
0°	2863.5	2863.5	2863.5	2863.5	2863.5	2863.5	2863.5	2863.5	2863.5	2863.5	2863.5
0.5°	2863.0	2862.1	2862.6	2862.6	2864.4	2864.9	2865.8	2866.2	2865.3	2863.5	2862.1
1°	2861.7	2860.8	2862.1	2863.0	2864.9	2865.8	2866.7	2867.1	2865.8	2863.5	2861.7
1.5°	2859.4	2859.4	2861.7	2863.0	2864.9	2866.2	2867.6	2867.6	2866.2	2863.5	2860.8
2°	2857.1	2857.6	2860.8	2863.0	2864.9	2866.2	2867.6	2867.6	2866.2	2863.0	2859.4
2.5°	2854.8	2855.8	2859.4	2862.1	2864.4	2866.2	2867.6	2867.6	2866.2	2862.6	2858.0
3°	2851.6	2853.0	2857.6	2861.2	2863.0	2865.8	2867.1	2867.6	2865.3	2861.7	2856.2
3.5°	2848.9	2850.3	2855.8	2860.3	2862.1	2864.9	2866.7	2866.7	2864.4	2860.3	2853.9
4°	2845.7	2847.5	2853.5	2858.9	2860.8	2864.0	2865.8	2866.2	2863.5	2858.5	2852.1
4.5°	2841.6	2843.9	2850.7	2857.1	2859.4	2862.1	2864.9	2864.9	2862.1	2856.7	2849.4
5°	2837.5	2840.3	2847.5	2854.8	2857.1	2860.8	2863.0	2863.0	2859.9	2854.4	2845.7
5.5°	2833.4	2836.2	2844.4	2852.6	2854.8	2858.5	2861.2	2861.2	2858.0	2852.1	2842.5
6°	2828.9	2832.1	2841.2	2849.8	2852.1	2855.8	2858.9	2858.9	2855.3	2848.9	2838.9
6.5°	2823.8	2827.5	2837.5	2847.1	2848.9	2853.5	2856.2	2856.2	2852.1	2845.7	2834.8
7°	2817.9	2822.0	2833.4	2843.9	2845.3	2850.3	2853.5	2853.5	2849.4	2842.5	2830.2
7.5°	2812.0	2816.6	2828.9	2840.3	2841.6	2847.1	2850.3	2849.8	2845.7	2838.4	2825.7
8°	2806.1	2811.1	2823.4	2836.2	2837.5	2843.4	2846.6	2846.2	2842.1	2834.3	2820.7
8.5°	2799.2	2804.3	2818.8	2832.1	2833.4	2839.3	2842.5	2842.5	2838.0	2829.8	2815.2
9°	2792.4	2797.9	2813.4	2827.5	2828.9	2835.2	2838.4	2838.4	2833.4	2825.2	2809.7
9.5°	2785.1	2791.0	2807.4	2822.0	2823.8	2830.7	2833.9	2833.4	2828.4	2819.7	2803.8
10°	2777.4	2784.2	2801.1	2817.0	2818.4	2825.2	2829.3	2828.9	2823.4	2814.3	2797.4
10.5°	2769.2	2776.4	2794.7	2811.1	2812.5	2819.7	2823.8	2823.4	2817.9	2808.8	2790.6
11°	2761.0	2768.2	2787.8	2805.2	2806.5	2813.8	2818.4	2817.9	2812.5	2802.4	2783.3
11.5°	2752.3	2760.0	2780.6	2798.8	2799.7	2807.9	2812.5	2811.5	2806.1	2796.0	2776.0
12°	2742.7	2751.4	2772.8	2791.9	2792.9	2802.0	2806.5	2805.2	2799.2	2789.2	2768.2
12.5°	2733.2	2742.3	2764.6	2784.7	2785.6	2795.1	2799.7	2798.3	2792.4	2781.9	2760.0
13°	2723.1	2733.2	2756.4	2777.8	2778.3	2787.4	2792.9	2791.5	2785.1	2774.6	2751.8
13.5°	2713.1	2723.1	2748.2	2769.6	2770.5	2780.6	2785.6	2783.7	2777.4	2766.4	2742.7
14°	2702.6	2712.6	2738.6	2761.9	2762.3	2772.3	2777.8	2776.0	2769.2	2757.8	2733.6
14.5°	2691.2	2701.7	2729.5	2753.2	2753.7	2763.7	2769.6	2768.2	2761.0	2749.1	2724.0
15°	2679.4	2690.8	2719.5	2744.5	2744.5	2755.5	2761.4	2759.1	2752.3	2740.4	2714.0
15.5°	2667.1	2679.4	2709.5	2735.4	2735.4	2746.8	2752.8	2750.5	2742.7	2730.9	2703.5
16°	2654.8	2667.5	2698.5	2725.9	2725.4	2736.8	2743.6	2740.9	2733.2	2721.3	2693.0
16.5°	2641.5	2655.2	2687.6	2715.4	2714.9	2727.2	2734.1	2731.3	2723.1	2710.8	2681.7
17°	2628.3	2642.5	2676.6	2705.4	2704.4	2716.7	2724.0	2721.8	2713.1	2700.3	2670.3
17.5°	2614.2	2629.2	2664.8	2694.9	2693.5	2706.7	2713.6	2711.3	2701.7	2689.4	2658.4
18°	2600.5	2616.0	2652.5	2683.5	2682.1	2695.8	2702.6	2699.9	2690.3	2678.0	2646.1
18.5°	2585.5	2601.4	2640.2	2672.1	2670.7	2683.9	2691.7	2688.5	2679.4	2666.6	2633.3
19°	2570.9	2587.3	2627.0	2660.7	2658.4	2671.6	2680.3	2676.6	2667.5	2654.3	2620.6
19.5°	2555.4	2572.3	2613.7	2647.9	2646.1	2660.7	2668.4	2664.3	2655.7	2641.5	2607.4
20°	2539.9	2557.7	2600.1	2635.2	2633.3	2647.5	2655.7	2652.5	2642.9	2628.8	2593.2
20.5°	2524.4	2542.2	2585.5	2621.9	2620.1	2634.7	2643.4	2639.3	2629.7	2615.6	2578.7
21°	2508.5	2526.2	2570.9	2608.7	2606.5	2621.5	2630.2	2626.1	2616.5	2602.4	2564.5

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**CANDELA DISTRIBUTION (continued):**

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
22.5°	2457.4	2477.0	2524.9	2565.9	2565.0	2580.0	2588.2	2585.0	2575.0	2559.5	2518.5
23°	2440.1	2460.2	2508.0	2551.8	2549.9	2565.4	2573.6	2570.4	2560.4	2544.5	2502.1
23.5°	2422.8	2442.4	2491.1	2536.7	2534.9	2550.9	2558.6	2555.4	2546.3	2529.0	2485.2
24°	2404.1	2424.6	2474.3	2521.2	2519.9	2535.8	2543.1	2540.4	2531.3	2513.5	2468.4
24.5°	2388.1	2407.3	2457.0	2505.7	2504.4	2520.3	2526.7	2524.9	2515.3	2498.0	2451.0
25°	2371.3	2389.1	2438.7	2489.3	2491.1	2504.8	2510.3	2508.9	2498.4	2482.0	2432.8
25.5°	2343.9	2370.8	2420.5	2472.9	2472.9	2488.9	2493.9	2493.4	2482.9	2465.6	2415.0
26°	2313.9	2353.1	2401.8	2456.5	2448.3	2472.0	2476.6	2477.0	2467.4	2448.8	2395.9
26.5°	2285.6	2336.2	2383.1	2439.6	2427.3	2456.1	2459.2	2459.7	2439.6	2431.4	2377.2
27°	2243.2	2314.8	2364.0	2421.9	2403.2	2441.0	2441.5	2442.4	2418.2	2413.2	2358.1
27.5°	2198.6	2282.0	2344.4	2406.4	2375.8	2420.1	2423.7	2426.4	2394.5	2396.8	2338.5
28°	2154.3	2255.5	2324.3	2389.1	2345.3	2395.0	2404.6	2403.6	2367.2	2376.3	2318.4
28.5°	2111.5	2219.5	2304.3	2363.1	2313.9	2374.0	2386.3	2377.2	2338.0	2349.4	2298.8
29°	2070.0	2176.7	2284.2	2339.8	2279.7	2348.0	2367.6	2356.2	2306.1	2327.1	2277.9
29.5°	2029.9	2133.4	2264.2	2316.6	2243.2	2319.8	2348.5	2330.7	2272.4	2302.5	2257.8
30°	1989.8	2090.1	2243.2	2289.7	2203.1	2290.2	2328.9	2302.0	2235.9	2274.7	2236.8
30.5°	1950.6	2047.7	2222.7	2260.5	2160.3	2258.7	2309.8	2272.4	2197.2	2244.6	2215.9
31°	1911.4	2006.2	2201.7	2228.6	2116.1	2224.1	2290.2	2240.9	2155.3	2213.6	2194.9
31.5°	1871.3	1967.0	2180.3	2196.3	2069.6	2189.4	2270.1	2206.8	2109.7	2179.9	2173.9
32°	1827.6	1927.4	2159.8	2161.2	2022.6	2151.2	2249.6	2170.3	2062.7	2144.8	2152.5
32.5°	1785.2	1889.1	2137.9	2124.3	1974.8	2109.2	2229.5	2132.5	2015.8	2106.0	2130.6
33°	1739.2	1849.4	2117.9	2083.2	1927.4	2065.9	2208.6	2091.0	1968.9	2065.9	2109.2
33.5°	1690.8	1809.8	2098.3	2043.1	1880.9	2020.8	2189.0	2047.7	1920.5	2022.6	2087.8
34°	1640.3	1767.4	2078.2	1999.4	1835.3	1974.8	2169.4	2002.6	1873.1	1978.4	2069.1
34.5°	1592.9	1724.6	2046.3	1953.4	1790.7	1928.7	2143.9	1956.1	1828.0	1932.9	2045.0
35°	1544.1	1679.9	2010.3	1907.3	1746.4	1882.7	2111.0	1908.7	1784.3	1885.5	2009.0
35.5°	1498.1	1633.0	1979.3	1861.8	1702.7	1837.1	2082.3	1864.0	1741.4	1839.9	1976.1
36°	1452.5	1584.7	1940.1	1816.6	1658.9	1792.9	2053.6	1818.5	1697.2	1795.2	1946.1
36.5°	1409.6	1536.8	1895.5	1772.0	1614.3	1748.7	2019.0	1773.8	1652.1	1750.5	1906.0
37°	1366.3	1489.9	1849.9	1726.8	1568.7	1705.0	1983.4	1729.6	1609.3	1706.8	1860.8
37.5°	1324.4	1446.6	1802.5	1684.0	1522.2	1663.0	1945.6	1687.2	1563.2	1664.9	1815.3
38°	1282.5	1401.0	1756.0	1641.2	1474.8	1618.8	1905.5	1643.9	1516.3	1622.0	1768.8
38.5°	1240.1	1359.1	1709.1	1598.8	1427.9	1576.0	1864.9	1602.4	1468.0	1580.6	1720.5
39°	1196.4	1317.6	1663.0	1556.4	1381.8	1532.7	1820.3	1558.2	1420.6	1538.2	1673.5
39.5°	1152.1	1277.0	1616.6	1513.1	1334.9	1487.6	1774.2	1514.5	1374.1	1495.8	1624.8
40°	1107.5	1234.2	1568.2	1470.7	1288.0	1442.9	1725.9	1468.9	1326.7	1452.0	1576.0
40.5°	1063.7	1194.1	1519.9	1427.0	1242.8	1397.3	1676.3	1423.8	1281.1	1406.9	1525.9
41°	1020.9	1152.1	1470.7	1382.3	1200.0	1351.3	1623.8	1377.3	1236.0	1361.8	1476.6
41.5°	979.9	1110.7	1422.4	1338.1	1155.8	1307.1	1570.5	1331.7	1193.6	1317.1	1427.4
42°	938.9	1068.3	1372.7	1293.4	1112.9	1263.3	1516.7	1286.6	1149.9	1272.9	1377.7
42.5°	900.6	1026.8	1323.1	1249.7	1070.1	1219.6	1463.4	1241.5	1107.5	1230.1	1329.0
43°	862.7	985.3	1272.9	1206.4	1027.3	1176.3	1411.9	1198.6	1066.0	1187.2	1281.6
43.5°	825.8	945.2	1223.2	1164.9	985.3	1134.4	1360.4	1156.2	1023.2	1146.2	1231.0



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**CANDELA DISTRIBUTION (continued):**

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
45°	718.7	832.2	1081.5	1042.3	862.7	1011.8	1213.7	1032.3	897.4	1025.9	1092.4
45.5°	685.5	796.7	1036.4	1003.1	822.6	969.8	1168.6	992.6	857.7	988.1	1047.3
46°	653.6	761.6	994.0	963.9	784.4	930.6	1124.3	951.6	818.1	948.0	1004.5
46.5°	623.0	727.4	953.0	925.2	746.5	892.4	1079.2	911.5	780.2	908.8	962.1
47°	593.4	694.1	913.3	886.9	711.0	853.2	1036.4	871.4	743.8	870.5	922.0
47.5°	567.0	661.8	874.6	849.1	676.3	815.8	993.5	832.2	708.7	833.1	882.3
48°	542.3	630.8	835.9	811.7	643.1	778.9	950.2	795.3	674.5	796.2	843.1
48.5°	520.0	600.7	798.5	774.3	612.1	742.0	909.7	758.8	642.6	760.7	805.3
49°	499.5	572.4	762.9	739.2	581.5	707.3	867.3	723.7	610.7	726.0	768.9
49.5°	479.9	546.4	728.3	705.5	552.8	672.2	826.7	688.2	581.1	693.2	733.8
50°	462.1	521.4	694.1	672.7	525.0	639.9	788.0	655.8	551.9	660.4	700.0
50.5°	446.2	498.6	660.8	640.8	498.1	607.5	749.7	623.0	524.1	629.4	666.3
51°	431.1	478.1	629.4	611.2	473.1	577.4	713.7	592.5	498.1	599.3	635.3
51.5°	416.6	458.9	599.3	581.1	450.3	548.7	678.6	563.3	474.0	571.1	605.2
52°	402.9	442.1	570.6	553.3	428.4	521.4	645.3	536.0	451.2	543.7	576.5
52.5°	389.2	425.7	544.2	525.5	410.2	494.5	612.1	507.7	429.3	516.4	549.2
53°	376.5	410.6	518.2	499.0	391.9	469.4	582.0	481.7	409.7	491.8	522.7
53.5°	362.8	396.5	494.0	473.1	373.7	445.3	551.9	458.0	392.4	467.1	498.1
54°	350.0	383.3	470.3	449.4	355.5	422.9	524.1	435.2	375.5	443.9	474.4
54.5°	337.7	370.1	448.9	426.6	337.7	404.7	496.8	413.4	358.2	422.0	453.0
55°	326.3	357.3	428.4	405.2	322.2	386.0	472.2	395.1	341.4	404.3	432.5
55.5°	316.3	344.5	409.3	386.0	309.9	367.8	447.1	377.4	325.9	386.5	412.5
56°	309.0	332.2	391.0	367.3	300.3	349.1	423.9	359.6	312.6	368.7	396.0
56.5°	303.5	319.9	374.2	350.5	294.4	330.9	405.2	341.8	301.7	351.4	379.2
57°	298.5	309.5	358.7	334.5	288.9	315.4	386.0	325.9	294.4	333.6	362.3
57.5°	293.0	299.9	343.6	319.5	283.9	301.7	367.3	311.3	288.9	318.6	345.9
58°	288.0	293.5	330.4	305.4	278.9	290.8	348.7	299.0	283.9	304.9	332.7
58.5°	283.0	288.0	318.6	294.0	273.9	283.9	329.5	288.5	278.9	294.0	319.9
59°	277.6	282.6	307.2	286.7	268.4	278.0	315.4	281.7	273.5	285.3	308.1
59.5°	272.1	277.6	297.2	280.7	263.4	273.0	302.6	275.7	268.4	279.4	297.6
60°	266.6	272.5	287.6	275.3	258.4	268.0	291.2	270.7	263.0	273.9	287.6
60.5°	260.7	267.1	278.9	270.3	253.4	262.5	281.2	265.2	258.0	268.9	278.5
61°	255.7	261.6	270.7	264.8	248.4	257.5	272.5	260.2	252.5	263.9	270.3
61.5°	250.2	256.1	263.0	259.3	243.4	252.5	263.9	255.2	247.0	258.4	262.5
62°	244.7	250.7	256.1	254.3	238.8	247.5	256.1	249.8	242.0	253.4	255.2
62.5°	238.8	244.7	248.8	249.3	233.8	242.5	248.8	244.3	237.0	247.9	247.9
63°	233.8	239.3	242.5	244.3	228.8	237.0	242.0	239.3	231.5	242.5	241.5
63.5°	228.3	233.8	236.1	238.8	223.8	232.0	235.6	233.8	226.5	237.4	235.6
64°	222.9	228.3	230.6	233.8	219.2	227.0	229.2	228.3	221.5	232.0	229.7
64.5°	217.4	223.3	225.1	228.8	214.2	222.0	223.8	223.3	216.0	226.5	224.2
65°	212.4	217.4	220.1	223.8	209.6	217.4	218.8	217.9	211.0	221.5	218.8
65.5°	206.9	211.9	215.1	218.8	204.6	212.4	213.3	212.8	206.0	216.0	213.7
66°	201.4	206.9	209.6	213.7	200.1	207.4	208.3	207.4	201.0	211.0	208.7





TEST NUMBER: P776640

CATALOG NUMBER: HCDJBL54050CSD-HCD4TSQMW-5000lm-2700K

**CANDELA DISTRIBUTION (continued):**

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
67.5°	185.5	190.5	194.2	198.7	185.9	192.8	193.2	191.9	185.9	195.5	193.7
68°	180.5	185.0	189.1	193.7	181.4	187.8	187.8	186.9	180.9	190.5	188.7
68.5°	175.0	179.6	183.7	188.7	176.4	183.2	182.8	181.8	175.9	185.0	183.7
69°	170.0	174.6	178.7	183.7	171.8	178.2	177.7	176.8	170.9	180.0	178.2
69.5°	163.6	169.1	173.2	179.1	167.3	173.2	172.7	171.4	165.9	175.0	173.2
70°	158.6	165.4	168.2	174.1	162.7	168.6	167.3	166.3	160.9	170.0	168.2
70.5°	154.0	160.0	162.7	169.1	158.1	164.1	162.2	161.3	156.3	165.0	163.2
71°	149.0	154.5	157.7	165.0	153.6	159.1	157.2	156.3	151.3	160.0	158.1
71.5°	144.5	148.6	152.7	160.0	149.0	154.0	152.2	151.3	146.3	154.5	153.1
72°	139.0	143.1	147.7	155.4	144.5	149.5	147.2	146.3	141.3	149.5	148.1
72.5°	134.0	137.6	142.7	150.4	139.9	144.9	142.2	141.3	136.7	144.5	143.1
73°	128.5	132.6	137.6	145.8	134.9	140.4	137.2	136.3	131.7	139.5	138.1
73.5°	123.5	127.2	132.6	140.8	130.3	135.4	132.6	131.3	126.7	134.4	133.1
74°	118.0	122.1	127.6	136.3	126.2	130.8	127.6	126.2	122.1	129.4	128.1
74.5°	113.0	116.7	122.1	131.3	121.7	126.2	122.6	121.2	117.1	124.4	123.5
75°	108.0	111.2	117.1	126.7	116.7	121.2	118.0	116.2	112.1	119.4	118.5
75.5°	103.0	106.2	112.1	121.7	112.1	116.7	113.0	111.2	107.6	114.4	113.5
76°	97.5	100.7	107.1	117.1	107.6	112.1	108.0	106.2	102.5	109.4	108.5
76.5°	92.5	95.7	102.1	112.6	103.5	107.6	103.5	101.2	98.0	104.8	103.5
77°	87.5	90.2	97.1	107.6	98.9	103.0	98.9	96.2	93.0	99.8	98.4
77.5°	82.5	85.2	92.1	103.0	94.3	98.4	94.3	91.2	88.4	94.8	93.9
78°	77.5	79.8	87.5	98.0	89.8	93.4	89.3	86.1	83.9	89.8	88.9
78.5°	72.5	74.7	82.5	93.4	85.2	88.9	84.8	81.1	78.8	84.8	83.9
79°	67.5	69.3	77.9	88.4	81.1	84.3	80.2	76.1	74.3	79.8	79.3
79.5°	62.4	64.3	72.9	83.9	76.6	79.8	75.7	71.1	69.7	75.2	74.7
80°	57.4	59.2	68.4	79.3	72.5	75.2	71.1	66.5	65.2	70.2	70.2
80.5°	52.9	54.2	63.8	74.3	67.9	70.6	67.0	61.5	60.6	65.2	65.2
81°	47.9	48.8	59.2	69.7	63.8	66.1	62.4	57.0	56.1	60.2	61.1
81.5°	42.8	43.8	54.7	65.2	59.2	62.0	58.3	52.9	51.5	55.6	56.5
82°	37.8	39.2	50.1	60.6	55.1	57.4	53.8	48.3	46.5	50.6	52.0
82.5°	33.3	34.6	46.0	56.5	51.0	53.3	49.7	44.2	41.9	45.6	47.9
83°	28.3	30.5	41.9	52.0	46.9	48.8	45.6	40.1	37.8	41.5	43.8
83.5°	23.2	26.0	37.8	47.9	42.4	44.7	41.9	36.0	33.3	36.9	40.1
84°	18.7	22.3	33.7	43.3	38.3	40.1	37.8	31.9	28.7	32.4	36.5
84.5°	16.4	18.7	30.1	39.2	34.2	36.0	34.2	28.3	24.2	28.3	32.8
85°	14.1	16.0	26.4	34.6	29.6	31.9	30.1	24.2	19.6	23.7	29.2
85.5°	11.4	13.2	22.3	30.5	25.5	27.3	26.4	20.5	16.4	20.1	25.1
86°	9.1	10.9	18.7	26.0	21.4	23.2	22.8	17.8	13.7	17.3	21.9
86.5°	6.8	8.7	15.5	21.9	17.3	19.1	19.1	15.0	11.8	15.0	18.2
87°	5.0	5.9	11.8	17.8	13.2	15.0	15.5	12.3	10.0	12.8	14.6
87.5°	2.7	3.6	8.7	13.7	9.1	10.9	11.8	9.6	7.7	10.0	10.9
88°	0.9	1.4	5.0	10.0	5.5	6.8	8.2	7.3	5.9	7.7	7.7
88.5°	0.0	0.5	1.8	5.9	1.8	3.2	4.6	4.6	4.1	5.5	4.1



TEST NUMBER: P776640  
CATALOG NUMBER: HCDJBL54050CSD-HCD4TSQMW-5000lm-2700K

**CANDELA DISTRIBUTION (continued):**

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



TEST NUMBER: P776640

CATALOG NUMBER: HCDJBL54050CSD-HCD4TSQMW-5000lm-2700K

**CANDELA DISTRIBUTION (continued):**

	247.5°	270°	292.5°	315°	337.5°	360°
0°	2863.5	2863.5	2863.5	2863.5	2863.5	2863.5
0.5°	2860.3	2862.6	2862.6	2863.0	2863.5	2863.0
1°	2859.4	2861.2	2860.8	2861.2	2862.1	2861.7
1.5°	2857.6	2859.4	2858.5	2858.9	2859.9	2859.4
2°	2855.8	2857.6	2856.2	2856.2	2857.1	2857.1
2.5°	2853.5	2855.3	2853.5	2853.5	2854.4	2854.8
3°	2850.7	2852.6	2850.3	2850.3	2851.2	2851.6
3.5°	2847.5	2849.8	2847.5	2847.1	2848.0	2848.9
4°	2844.4	2846.2	2843.9	2843.4	2844.4	2845.7
4.5°	2840.7	2843.0	2839.8	2839.3	2840.3	2841.6
5°	2836.6	2838.9	2835.2	2835.2	2836.2	2837.5
5.5°	2832.5	2834.8	2830.7	2830.2	2831.6	2833.4
6°	2827.9	2829.8	2825.7	2825.2	2826.6	2828.9
6.5°	2822.9	2824.8	2820.7	2820.2	2821.1	2823.8
7°	2817.5	2819.3	2814.7	2814.3	2815.6	2817.9
7.5°	2811.5	2813.8	2808.8	2808.4	2809.3	2812.0
8°	2805.6	2807.4	2802.4	2802.0	2803.3	2806.1
8.5°	2799.2	2801.1	2795.6	2795.1	2796.5	2799.2
9°	2792.9	2794.2	2788.8	2787.8	2789.2	2792.4
9.5°	2785.6	2786.9	2781.5	2780.6	2781.9	2785.1
10°	2777.8	2780.1	2773.7	2772.3	2774.2	2777.4
10.5°	2770.1	2772.3	2765.5	2764.6	2765.5	2769.2
11°	2761.9	2763.7	2757.3	2755.9	2757.3	2761.0
11.5°	2753.7	2755.0	2748.2	2746.8	2748.6	2752.3
12°	2744.5	2746.4	2739.1	2737.7	2739.1	2742.7
12.5°	2735.4	2736.8	2729.5	2728.1	2729.1	2733.2
13°	2725.9	2727.2	2719.5	2718.1	2719.5	2723.1
13.5°	2715.4	2717.2	2709.5	2708.1	2709.0	2713.1
14°	2705.4	2706.7	2698.5	2697.1	2698.5	2702.6
14.5°	2694.4	2695.8	2687.6	2685.8	2686.7	2691.2
15°	2683.5	2684.4	2676.2	2674.4	2674.8	2679.4
15.5°	2671.6	2672.5	2663.9	2662.5	2662.5	2667.1
16°	2659.8	2660.7	2651.6	2650.2	2650.7	2654.8
16.5°	2647.0	2648.4	2639.3	2637.4	2637.9	2641.5
17°	2634.3	2635.2	2626.5	2624.7	2624.7	2628.3
17.5°	2621.0	2621.9	2612.8	2611.0	2610.6	2614.2
18°	2607.8	2607.8	2599.2	2597.3	2596.9	2600.5
18.5°	2593.2	2593.7	2584.6	2583.7	2582.3	2585.5
19°	2579.1	2579.6	2570.0	2568.6	2567.3	2570.9
19.5°	2564.5	2564.5	2555.0	2554.0	2552.2	2555.4
20°	2549.0	2549.5	2539.5	2538.5	2536.3	2539.9
20.5°	2533.5	2534.0	2524.0	2522.1	2520.3	2524.4
21°	2517.6	2518.0	2507.6	2506.6	2503.9	2508.5

TEST NUMBER: P776640

CATALOG NUMBER: HCDJBL54050CSD-HCD4TSQMW-5000lm-2700K

**CANDELA DISTRIBUTION (continued):**

	247.5°	270°	292.5°	315°	337.5°	360°
22.5°	2467.9	2468.8	2457.0	2454.7	2452.9	2457.4
23°	2450.6	2451.5	2439.6	2437.4	2435.5	2440.1
23.5°	2433.7	2433.7	2422.3	2418.2	2417.8	2422.8
24°	2415.9	2416.4	2404.1	2400.0	2399.5	2404.1
24.5°	2397.7	2398.2	2385.4	2380.9	2380.9	2388.1
25°	2379.0	2380.9	2367.2	2361.7	2361.7	2371.3
25.5°	2360.8	2364.9	2348.0	2341.2	2343.5	2343.9
26°	2342.6	2343.5	2328.9	2322.5	2323.9	2313.9
26.5°	2326.2	2311.1	2310.2	2301.1	2307.0	2285.6
27°	2307.5	2286.1	2293.4	2281.5	2288.8	2243.2
27.5°	2277.9	2250.5	2273.3	2260.1	2260.1	2198.6
28°	2248.2	2207.7	2243.2	2239.1	2230.5	2154.3
28.5°	2220.0	2164.4	2214.1	2217.7	2200.8	2111.5
29°	2180.8	2122.0	2185.8	2196.7	2160.3	2070.0
29.5°	2138.4	2079.6	2145.7	2173.9	2117.4	2029.9
30°	2096.0	2039.0	2104.7	2153.0	2073.2	1989.8
30.5°	2054.5	1997.1	2060.9	2131.1	2031.7	1950.6
31°	2014.0	1957.0	2020.4	2109.2	1990.3	1911.4
31.5°	1972.5	1916.4	1978.4	2086.9	1949.7	1871.3
32°	1932.4	1875.4	1938.8	2064.6	1911.0	1827.6
32.5°	1892.3	1832.6	1899.6	2042.7	1873.6	1785.2
33°	1852.6	1789.3	1859.9	2021.7	1834.9	1739.2
33.5°	1812.1	1744.2	1820.3	2003.0	1797.5	1690.8
34°	1769.7	1697.7	1781.1	1982.5	1757.8	1640.3
34.5°	1727.3	1650.7	1739.6	1948.8	1717.3	1592.9
35°	1684.0	1602.9	1697.2	1908.7	1673.5	1544.1
35.5°	1638.9	1555.0	1654.4	1878.6	1630.7	1498.1
36°	1593.3	1509.5	1609.3	1835.3	1584.2	1452.5
36.5°	1546.8	1463.4	1565.1	1781.5	1539.1	1409.6
37°	1501.3	1420.1	1519.5	1727.8	1491.7	1366.3
37.5°	1456.1	1376.4	1474.8	1674.4	1447.5	1324.4
38°	1412.4	1333.5	1429.7	1621.6	1403.7	1282.5
38.5°	1370.0	1291.1	1387.8	1571.0	1361.8	1240.1
39°	1326.7	1249.7	1344.9	1521.8	1320.8	1196.4
39.5°	1285.2	1205.9	1305.3	1474.4	1280.7	1152.1
40°	1244.7	1162.2	1264.3	1428.8	1241.5	1107.5
40.5°	1205.0	1119.8	1223.7	1385.0	1202.3	1063.7
41°	1163.1	1076.5	1183.6	1342.2	1162.6	1020.9
41.5°	1122.1	1034.1	1143.9	1299.4	1121.6	979.9
42°	1080.6	992.6	1102.9	1257.4	1081.0	938.9
42.5°	1040.5	952.5	1061.9	1216.9	1040.9	900.6
43°	999.5	912.9	1021.8	1174.9	1000.4	862.7
43.5°	958.9	874.6	981.2	1132.1	960.7	825.8

TEST NUMBER: P776640

CATALOG NUMBER: HCDJBL54050CSD-HCD4TSQMW-5000lm-2700K

**CANDELA DISTRIBUTION (continued):**

	247.5°	270°	292.5°	315°	337.5°	360°
45°	845.9	765.2	866.8	1004.0	848.6	718.7
45.5°	811.2	730.6	831.7	963.5	814.0	685.5
46°	775.2	696.4	796.7	924.3	779.3	653.6
46.5°	741.1	663.1	761.6	885.5	745.6	623.0
47°	707.8	631.7	728.3	849.1	712.8	593.4
47.5°	675.4	600.7	694.1	814.4	680.9	567.0
48°	643.1	573.3	661.8	781.6	649.4	542.3
48.5°	613.0	546.0	631.2	750.2	619.4	520.0
49°	582.9	521.8	601.6	718.7	590.7	499.5
49.5°	555.6	499.5	573.3	689.1	563.8	479.9
50°	528.2	478.5	546.4	659.9	538.7	462.1
50.5°	504.1	459.4	521.8	631.7	515.0	446.2
51°	481.3	442.5	498.1	604.3	493.6	431.1
51.5°	460.3	426.6	477.6	577.4	473.5	416.6
52°	441.2	412.0	458.9	551.9	455.3	402.9
52.5°	423.9	397.9	440.7	527.3	438.4	389.2
53°	407.9	384.2	424.3	504.1	422.5	376.5
53.5°	394.2	371.0	408.8	481.7	407.4	362.8
54°	381.0	357.8	393.8	460.8	393.3	350.0
54.5°	367.8	345.5	381.0	440.7	379.6	337.7
55°	354.1	333.2	367.3	422.0	367.3	326.3
55.5°	340.9	321.3	354.1	404.3	354.1	316.3
56°	329.1	311.3	341.8	387.8	341.8	309.0
56.5°	316.7	303.1	329.5	372.4	329.5	303.5
57°	305.8	296.7	317.7	357.3	318.1	298.5
57.5°	296.2	291.7	306.7	343.6	307.6	293.0
58°	288.0	286.2	297.6	330.9	299.0	288.0
58.5°	282.1	281.2	290.3	319.0	292.1	283.0
59°	277.1	276.2	284.8	308.1	287.1	277.6
59.5°	272.1	271.6	279.4	297.2	281.7	272.1
60°	267.1	266.2	274.4	288.0	276.6	266.6
60.5°	262.1	261.6	269.4	279.4	270.7	260.7
61°	256.6	256.6	263.9	271.2	265.7	255.7
61.5°	251.6	251.6	258.9	263.4	260.2	250.2
62°	246.6	246.6	253.9	256.1	254.8	244.7
62.5°	241.5	241.5	248.4	249.3	248.8	238.8
63°	236.5	237.0	243.4	242.9	243.4	233.8
63.5°	231.5	232.0	238.4	237.0	237.9	228.3
64°	226.5	227.4	233.3	231.1	232.4	222.9
64.5°	221.5	222.4	227.9	226.1	227.0	217.4
65°	216.9	217.4	223.3	221.0	221.5	212.4
65.5°	211.9	212.8	218.3	215.6	216.0	206.9
66°	206.9	207.8	212.8	210.6	210.6	201.4



TEST NUMBER: P776640

CATALOG NUMBER: HCDJBL54050CSD-HCD4TSQMW-5000lm-2700K

**CANDELA DISTRIBUTION (continued):**

	247.5°	270°	292.5°	315°	337.5°	360°
67.5°	192.3	193.7	198.3	195.5	194.2	185.5
68°	187.3	189.1	193.2	190.0	188.7	180.5
68.5°	182.8	184.1	188.2	184.6	183.2	175.0
69°	177.7	179.6	183.2	179.6	178.2	170.0
69.5°	172.7	175.0	178.2	174.1	172.7	163.6
70°	168.2	170.5	173.2	169.1	167.3	158.6
70.5°	163.2	165.0	168.6	164.5	162.2	154.0
71°	158.6	160.4	165.4	159.5	156.8	149.0
71.5°	153.6	156.3	160.4	154.0	151.8	144.5
72°	149.0	151.8	155.0	149.0	146.8	139.0
72.5°	144.0	147.2	149.9	144.0	141.3	134.0
73°	139.5	143.1	144.9	139.0	135.8	128.5
73.5°	134.9	138.1	139.9	133.5	130.8	123.5
74°	129.9	133.5	135.4	128.5	125.3	118.0
74.5°	125.3	129.0	130.3	123.5	119.9	113.0
75°	120.3	124.4	125.3	118.5	114.8	108.0
75.5°	115.8	119.9	120.8	113.5	109.4	103.0
76°	110.7	115.3	115.8	108.0	104.4	97.5
76.5°	106.2	110.3	111.2	103.0	98.9	92.5
77°	101.6	105.7	106.2	98.4	93.4	87.5
77.5°	96.6	101.2	101.6	93.4	88.4	82.5
78°	92.1	96.6	96.6	88.4	82.9	77.5
78.5°	87.0	92.1	92.1	83.4	77.9	72.5
79°	82.5	87.5	87.0	78.8	72.5	67.5
79.5°	77.9	82.9	82.5	73.8	67.5	62.4
80°	72.9	78.4	77.5	69.3	62.0	57.4
80.5°	68.4	73.8	72.9	64.7	57.0	52.9
81°	63.8	69.7	68.4	60.2	52.0	47.9
81.5°	59.7	65.2	63.8	55.6	47.4	42.8
82°	55.1	60.6	59.2	51.0	42.4	37.8
82.5°	50.6	56.5	54.7	46.9	38.3	33.3
83°	46.5	52.0	50.1	42.8	33.7	28.3
83.5°	41.9	47.4	45.6	38.7	29.6	23.2
84°	37.8	43.3	41.0	34.6	25.5	18.7
84.5°	33.3	39.2	36.9	31.0	21.9	16.4
85°	29.2	34.6	32.4	26.9	18.7	14.1
85.5°	24.6	30.5	27.8	23.2	16.0	11.4
86°	20.5	26.0	23.2	19.1	13.2	9.1
86.5°	16.0	21.9	19.1	15.5	10.5	6.8
87°	11.8	17.3	15.0	11.8	7.7	5.0
87.5°	7.7	13.7	11.4	8.7	5.0	2.7
88°	4.1	9.6	7.7	5.0	2.3	0.9
88.5°	1.4	5.5	4.1	1.4	0.9	0.0



TEST NUMBER: P776640  
CATALOG NUMBER: HCDJBL54050CSD-HCD4TSQMW-5000lm-2700K

**CANDELA DISTRIBUTION (continued):**

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



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Scaled Data Report





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

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Peachtree City, GA 30269

Scaled Data Report



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Scaled Data Report





21.5°	2491.6	2509.8	2555.9	2595.1	2592.8	2607.8	2616.9	2612.8	2603.3	2587.8	2549.9
22°	2474.3	2493.4	2540.4	2580.5	2579.1	2593.7	2602.8	2599.2	2589.6	2574.1	2534.0



44°	789.8	905.1	1174.0	1122.1	943.4	1092.4	1308.9	1114.3	979.9	1104.3	1183.1
44.5°	753.8	868.7	1127.5	1081.5	902.8	1051.9	1261.5	1074.2	938.9	1066.0	1136.6



66.5°	196.4	201.4	204.6	208.7	195.1	202.4	203.3	202.4	196.0	206.0	203.7
67°	191.0	196.0	199.6	203.7	190.5	197.3	198.3	197.3	191.0	200.5	198.7



89°	0.0	0.5	0.5	2.3	0.5	0.9	1.8	2.3	2.3	3.2	1.8
89.5°	0.0	0.5	0.5	0.5	0.0	0.0	0.5	0.5	0.5	1.4	0.5



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21.5°	2501.6	2502.1	2491.1	2489.3	2487.0	2491.6
22°	2485.2	2485.2	2474.3	2472.5	2470.2	2474.3



44°	920.6	837.2	942.5	1088.8	921.5	789.8
44.5°	883.7	800.8	905.1	1046.4	885.1	753.8

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66.5°	201.9	203.3	208.3	205.5	205.1	196.4
67°	197.3	198.7	203.3	200.5	199.6	191.0



89°	0.5	1.8	0.9	0.5	0.5	0.0
89.5°	0.0	0.5	0.5	0.5	0.5	0.0

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Peachtree City, GA 30269

Scaled Data Report



(END OF REPORT)