

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: P776641

Luminaire Tested: HCDJBS4050CSD-HCD4TSQMW-5000lm-3000K

Issue Date: 2/7/2024

**Test Information**

Test Method: LM-79-2019  
Report Number: P776641  
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-3000K  
Description: 4 INCH SQUARE MEDIUM MATTE WHITE TRIM  
Light Source: SELECTABLE LUMENS AND CCT ARRAY 90CRI / 3000K CCT  
Ballast/Driver: -

**Summary**

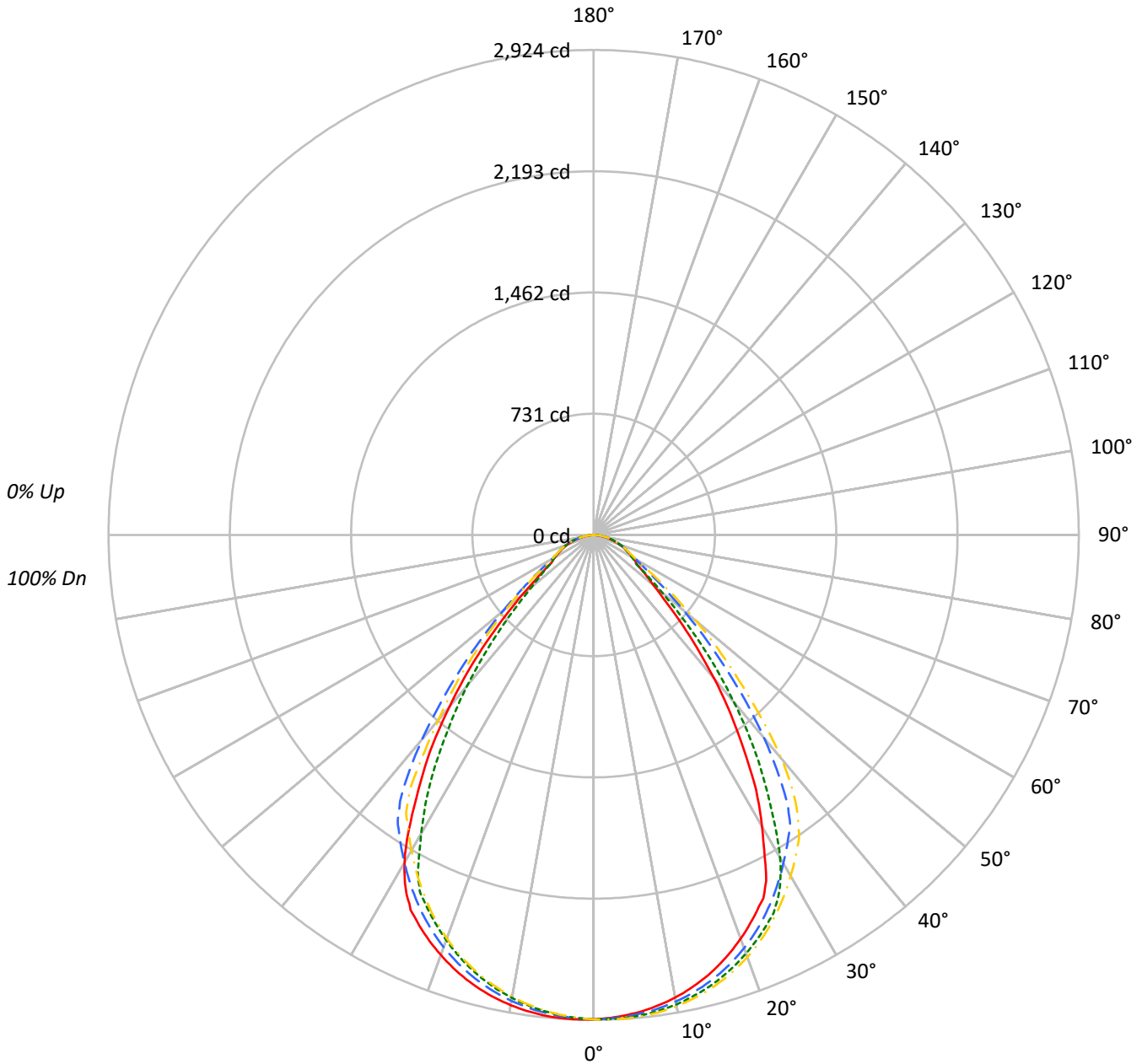
Lumens per Lamp: N/A  
Luminaire Lumens: 4828.7 lumens  
Efficiency: N/A  
Efficacy: 100.6 lumens/watt  
Spacing Criteria (0/90/45): 1.12 / 1.13 / 1.17  
Luminous Opening: Rectangular (W 0.33' x L: 0.33' x H: 0')  
CIE Type: Direct

Input Watts (W): 48  
Input Voltage (V): NR  
Input Current (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					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				100				
1	111	108	104	101	109	106	103	100	101	99	97	98	96	94	94	93	91	89				89				
2	104	97	92	88	101	96	91	86	92	88	85	89	86	83	86	83	81	79				79				
3	97	88	82	77	94	87	81	76	84	79	75	81	77	73	79	75	72	70				70				
4	90	80	73	68	88	79	72	67	77	71	66	75	70	66	73	68	65	63				63				
5	84	73	66	61	82	72	65	60	70	64	60	69	63	59	67	62	58	57				57				
6	79	67	60	55	77	67	59	54	65	59	54	63	58	53	62	57	53	51				51				
7	74	62	55	49	72	61	54	49	60	54	49	59	53	49	57	52	48	47				47				
8	69	58	50	45	68	57	50	45	56	49	45	55	49	45	53	48	44	43				43				
9	65	53	46	41	64	53	46	41	52	46	41	51	45	41	50	45	41	39				39				
10	61	50	43	38	60	49	43	38	48	42	38	48	42	38	47	41	38	36				36				

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

	0°	90°	180°	270°
0°	288609	288609	288609	288609
5°	287082	289067	289345	287221
10°	284239	288445	288957	284520
15°	279573	286378	287186	280095
20°	272420	282445	283475	273451
25°	263708	277035	277842	264766
30°	231576	256400	260212	237306
35°	189986	214879	219536	197213
40°	145713	169454	174551	152913
45°	102448	122968	127902	109073
50°	72457	82329	86542	75040
55°	57333	56626	59987	58539
60°	53750	52090	52999	53652
65°	50659	50004	50331	51851
70°	46731	47944	47395	50227
75°	42047	45446	43651	48463
80°	33356	42065	37852	45480
85°	16331	34249	22682	40033

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 135°  
 Vertical Angle: 45°  
 Luminance: 172997 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	275.6	5.7
10°-20°	779.9	16.2
20°-30°	1136.8	23.5
30°-40°	1143.5	23.7
40°-50°	749.7	15.5
50°-60°	363.3	7.5
60°-70°	220.8	4.6
70°-80°	127.1	2.6
80°-90°	31.9	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°	2192.4	45.4
0°-40°	3335.9	69.1
0°-60°	4448.9	92.1
0°-90°	4828.7	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4828.7	100.0

**CANDELA DISTRIBUTION:**

	0°	90°	180°	270°	360°	Flux
0°	2920	2920	2920	2920	2920	
5°	2893	2913	2916	2895	2893	274
15°	2732	2799	2806	2737	2732	769
25°	2418	2540	2548	2428	2418	1089
35°	1574	1781	1819	1634	1574	982
45°	733	880	915	780	733	577
55°	333	329	348	340	333	311
65°	217	214	215	222	217	214
75°	110	119	114	127	110	116
85°	14	30	20	35	14	21
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°	2919.9	2919.9	2919.9	2919.9	2919.9	2919.9	2919.9	2919.9	2919.9	2919.9	2919.9
0.5°	2919.4	2918.5	2918.9	2918.9	2920.8	2921.3	2922.2	2922.7	2921.7	2919.9	2918.5
1°	2918.0	2917.1	2918.5	2919.4	2921.3	2922.2	2923.1	2923.6	2922.2	2919.9	2918.0
1.5°	2915.7	2915.7	2918.0	2919.4	2921.3	2922.7	2924.1	2924.1	2922.7	2919.9	2917.1
2°	2913.4	2913.8	2917.1	2919.4	2921.3	2922.7	2924.1	2924.1	2922.7	2919.4	2915.7
2.5°	2911.0	2912.0	2915.7	2918.5	2920.8	2922.7	2924.1	2924.1	2922.7	2918.9	2914.3
3°	2907.8	2909.2	2913.8	2917.6	2919.4	2922.2	2923.6	2924.1	2921.7	2918.0	2912.4
3.5°	2905.0	2906.4	2912.0	2916.6	2918.5	2921.3	2923.1	2923.1	2920.8	2916.6	2910.1
4°	2901.8	2903.6	2909.7	2915.2	2917.1	2920.3	2922.2	2922.7	2919.9	2914.8	2908.3
4.5°	2897.6	2899.9	2906.9	2913.4	2915.7	2918.5	2921.3	2921.3	2918.5	2912.9	2905.5
5°	2893.4	2896.2	2903.6	2911.0	2913.4	2917.1	2919.4	2919.4	2916.2	2910.6	2901.8
5.5°	2889.2	2892.0	2900.4	2908.7	2911.0	2914.8	2917.6	2917.6	2914.3	2908.3	2898.5
6°	2884.6	2887.8	2897.1	2905.9	2908.3	2912.0	2915.2	2915.2	2911.5	2905.0	2894.8
6.5°	2879.4	2883.2	2893.4	2903.1	2905.0	2909.7	2912.4	2912.4	2908.3	2901.8	2890.6
7°	2873.4	2877.6	2889.2	2899.9	2901.3	2906.4	2909.7	2909.7	2905.5	2898.5	2886.0
7.5°	2867.4	2872.0	2884.6	2896.2	2897.6	2903.1	2906.4	2905.9	2901.8	2894.3	2881.3
8°	2861.3	2866.4	2879.0	2892.0	2893.4	2899.4	2902.7	2902.2	2898.0	2890.1	2876.2
8.5°	2854.4	2859.5	2874.3	2887.8	2889.2	2895.2	2898.5	2898.5	2893.9	2885.5	2870.6
9°	2847.4	2853.0	2868.8	2883.2	2884.6	2891.1	2894.3	2894.3	2889.2	2880.8	2865.0
9.5°	2839.9	2846.0	2862.7	2877.6	2879.4	2886.4	2889.7	2889.2	2884.1	2875.3	2859.0
10°	2832.0	2839.0	2856.2	2872.5	2873.9	2880.8	2885.0	2884.6	2879.0	2869.7	2852.5
10.5°	2823.7	2831.1	2849.7	2866.4	2867.8	2875.3	2879.4	2879.0	2873.4	2864.1	2845.5
11°	2815.3	2822.8	2842.7	2860.4	2861.8	2869.2	2873.9	2873.4	2867.8	2857.6	2838.1
11.5°	2806.5	2814.4	2835.3	2853.9	2854.8	2863.2	2867.8	2866.9	2861.3	2851.1	2830.7
12°	2796.7	2805.6	2827.4	2846.9	2847.8	2857.1	2861.8	2860.4	2854.4	2844.1	2822.8
12.5°	2787.0	2796.3	2819.0	2839.5	2840.4	2850.2	2854.8	2853.4	2847.4	2836.7	2814.4
13°	2776.7	2787.0	2810.7	2832.5	2833.0	2842.3	2847.8	2846.5	2839.9	2829.3	2806.0
13.5°	2766.5	2776.7	2802.3	2824.1	2825.1	2835.3	2840.4	2838.6	2832.0	2820.9	2796.7
14°	2755.8	2766.1	2792.5	2816.2	2816.7	2826.9	2832.5	2830.7	2823.7	2812.1	2787.4
14.5°	2744.2	2754.9	2783.2	2807.4	2807.9	2818.1	2824.1	2822.8	2815.3	2803.2	2777.7
15°	2732.1	2743.7	2773.0	2798.6	2798.6	2809.7	2815.8	2813.5	2806.5	2794.4	2767.4
15.5°	2719.6	2732.1	2762.8	2789.3	2789.3	2800.9	2806.9	2804.6	2796.7	2784.6	2756.8
16°	2707.0	2720.0	2751.6	2779.5	2779.1	2790.7	2797.7	2794.9	2787.0	2774.9	2746.1
16.5°	2693.6	2707.5	2740.5	2768.8	2768.4	2780.9	2787.9	2785.1	2776.7	2764.2	2734.5
17°	2680.1	2694.5	2729.3	2758.6	2757.7	2770.2	2777.7	2775.3	2766.5	2753.5	2722.8
17.5°	2665.7	2681.0	2717.3	2747.9	2746.5	2760.0	2767.0	2764.7	2754.9	2742.4	2710.8
18°	2651.7	2667.5	2704.7	2736.3	2734.9	2748.9	2755.8	2753.0	2743.3	2730.7	2698.2
18.5°	2636.4	2652.7	2692.2	2724.7	2723.3	2736.8	2744.7	2741.4	2732.1	2719.1	2685.2
19°	2621.5	2638.3	2678.7	2713.1	2710.8	2724.2	2733.1	2729.3	2720.0	2706.6	2672.2
19.5°	2605.7	2622.9	2665.2	2700.1	2698.2	2713.1	2721.0	2716.8	2708.0	2693.6	2658.7
20°	2589.9	2608.0	2651.3	2687.1	2685.2	2699.6	2708.0	2704.7	2695.0	2680.5	2644.3
20.5°	2574.1	2592.2	2636.4	2673.6	2671.7	2686.6	2695.4	2691.2	2681.5	2667.1	2629.4
21°	2557.9	2576.0	2621.5	2660.1	2657.8	2673.1	2681.9	2677.8	2668.0	2653.6	2615.0



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**CANDELA DISTRIBUTION (continued):**

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
22.5°	2505.8	2525.8	2574.6	2616.4	2615.5	2630.8	2639.2	2635.9	2625.7	2609.9	2568.1
23°	2488.1	2508.6	2557.4	2602.0	2600.1	2615.9	2624.3	2621.1	2610.8	2594.6	2551.4
23.5°	2470.5	2490.5	2540.2	2586.7	2584.8	2601.1	2609.0	2605.7	2596.4	2578.8	2534.2
24°	2451.4	2472.3	2523.0	2570.9	2569.5	2585.7	2593.2	2590.4	2581.1	2563.0	2517.0
24.5°	2435.2	2454.7	2505.3	2555.1	2553.7	2569.9	2576.4	2574.6	2564.8	2547.2	2499.3
25°	2418.0	2436.1	2486.8	2538.3	2540.2	2554.1	2559.7	2558.3	2547.6	2530.9	2480.7
25.5°	2390.1	2417.5	2468.2	2521.6	2521.6	2537.9	2543.0	2542.5	2531.8	2514.2	2462.6
26°	2359.4	2399.4	2449.1	2504.9	2496.5	2520.7	2525.3	2525.8	2516.0	2497.0	2443.1
26.5°	2330.6	2382.2	2430.1	2487.7	2475.1	2504.4	2507.7	2508.1	2487.7	2479.3	2424.0
27°	2287.4	2360.3	2410.5	2469.6	2450.5	2489.1	2489.5	2490.5	2465.8	2460.7	2404.5
27.5°	2241.8	2326.9	2390.6	2453.8	2422.6	2467.7	2471.4	2474.2	2441.7	2444.0	2384.5
28°	2196.8	2299.9	2370.1	2436.1	2391.5	2442.1	2451.9	2451.0	2413.8	2423.1	2364.1
28.5°	2153.1	2263.2	2349.7	2409.6	2359.4	2420.8	2433.3	2424.0	2384.0	2395.7	2344.1
29°	2110.8	2219.5	2329.2	2385.9	2324.6	2394.3	2414.3	2402.6	2351.5	2372.9	2322.7
29.5°	2069.9	2175.4	2308.8	2362.2	2287.4	2365.5	2394.7	2376.6	2317.1	2347.8	2302.3
30°	2029.0	2131.2	2287.4	2334.8	2246.5	2335.3	2374.8	2347.3	2279.9	2319.5	2280.9
30.5°	1989.0	2088.0	2266.5	2305.0	2202.8	2303.2	2355.2	2317.1	2240.4	2288.8	2259.5
31°	1949.1	2045.7	2245.1	2272.5	2157.7	2267.9	2335.3	2285.1	2197.7	2257.2	2238.1
31.5°	1908.2	2005.8	2223.3	2239.5	2110.3	2232.5	2314.8	2250.2	2151.2	2222.8	2216.7
32°	1863.6	1965.3	2202.3	2203.7	2062.5	2193.5	2293.9	2213.0	2103.4	2187.0	2194.9
32.5°	1820.3	1926.3	2180.0	2166.1	2013.7	2150.8	2273.4	2174.5	2055.5	2147.5	2172.6
33°	1773.4	1885.9	2159.6	2124.3	1965.3	2106.6	2252.1	2132.2	2007.6	2106.6	2150.8
33.5°	1724.1	1845.4	2139.6	2083.4	1917.9	2060.6	2232.1	2088.0	1958.4	2062.5	2128.9
34°	1672.6	1802.2	2119.2	2038.8	1871.5	2013.7	2212.1	2042.0	1910.0	2017.4	2109.9
34.5°	1624.2	1758.5	2086.6	1991.8	1825.9	1966.7	2186.1	1994.6	1864.0	1970.9	2085.2
35°	1574.5	1713.0	2049.9	1944.9	1780.8	1919.8	2152.6	1946.3	1819.4	1922.6	2048.5
35.5°	1527.6	1665.1	2018.3	1898.4	1736.2	1873.3	2123.3	1900.7	1775.7	1876.1	2015.1
36°	1481.1	1615.9	1978.3	1852.4	1691.6	1828.2	2094.1	1854.3	1730.6	1830.6	1984.4
36.5°	1437.4	1567.1	1932.8	1806.9	1646.1	1783.2	2058.7	1808.7	1684.6	1785.0	1943.5
37°	1393.3	1519.2	1886.3	1760.8	1599.6	1738.5	2022.5	1763.6	1641.0	1740.4	1897.5
37.5°	1350.5	1475.0	1838.0	1717.2	1552.2	1695.8	1983.9	1720.4	1594.0	1697.6	1851.0
38°	1307.7	1428.6	1790.6	1673.5	1503.9	1650.7	1943.0	1676.3	1546.1	1654.0	1803.6
38.5°	1264.5	1385.8	1742.7	1630.3	1456.0	1607.0	1901.7	1634.0	1496.9	1611.7	1754.3
39°	1219.9	1343.5	1695.8	1587.0	1409.1	1562.9	1856.1	1588.9	1448.6	1568.5	1706.5
39.5°	1174.8	1302.2	1648.4	1542.9	1361.2	1516.9	1809.2	1544.3	1401.2	1525.2	1656.8
40°	1129.3	1258.5	1599.1	1499.7	1313.3	1471.3	1759.9	1497.8	1352.8	1480.6	1607.0
40.5°	1084.7	1217.6	1549.9	1455.1	1267.3	1424.9	1709.3	1451.8	1306.3	1434.6	1555.9
41°	1041.0	1174.8	1499.7	1409.5	1223.6	1377.9	1655.8	1404.4	1260.3	1388.6	1505.7
41.5°	999.2	1132.5	1450.4	1364.4	1178.5	1332.8	1601.4	1357.9	1217.1	1343.1	1455.5
42°	957.3	1089.3	1399.8	1318.9	1134.9	1288.2	1546.6	1311.9	1172.5	1298.0	1404.9
42.5°	918.3	1047.0	1349.1	1274.3	1091.2	1243.6	1492.2	1265.9	1129.3	1254.3	1355.1
43°	879.7	1004.7	1298.0	1230.1	1047.5	1199.5	1439.7	1222.2	1087.0	1210.6	1306.8
43.5°	842.1	963.8	1247.3	1187.8	1004.7	1156.7	1387.2	1179.0	1043.3	1168.8	1255.2



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**CANDELA DISTRIBUTION (continued):**

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
45°	732.9	848.6	1102.8	1062.8	879.7	1031.7	1237.6	1052.6	915.0	1046.1	1114.0
45.5°	698.9	812.3	1056.8	1022.9	838.8	988.9	1191.6	1012.2	874.6	1007.5	1067.9
46°	666.4	776.6	1013.6	982.9	799.8	949.0	1146.5	970.3	834.2	966.6	1024.3
46.5°	635.3	741.7	971.7	943.4	761.2	909.9	1100.5	929.5	795.6	926.7	981.0
47°	605.1	707.8	931.3	904.4	725.0	870.0	1056.8	888.6	758.4	887.6	940.1
47.5°	578.1	674.8	891.8	865.8	689.7	831.9	1013.1	848.6	722.7	849.5	899.7
48°	553.0	643.2	852.3	827.7	655.7	794.2	969.0	810.9	687.8	811.9	859.7
48.5°	530.3	612.5	814.2	789.6	624.1	756.6	927.6	773.8	655.3	775.6	821.2
49°	509.3	583.7	778.0	753.8	593.0	721.3	884.4	738.0	622.7	740.3	784.0
49.5°	489.4	557.2	742.6	719.4	563.7	685.5	843.0	701.7	592.5	706.8	748.2
50°	471.2	531.6	707.8	685.9	535.4	652.5	803.5	668.7	562.8	673.4	713.8
50.5°	455.0	508.4	673.9	653.4	507.9	619.5	764.5	635.3	534.4	641.8	679.4
51°	439.6	487.5	641.8	623.2	482.4	588.8	727.8	604.1	507.9	611.1	647.8
51.5°	424.8	468.0	611.1	592.5	459.2	559.5	692.0	574.4	483.3	582.3	617.2
52°	410.8	450.8	581.8	564.2	436.8	531.6	658.1	546.5	460.1	554.4	587.9
52.5°	396.9	434.1	554.9	535.8	418.3	504.2	624.1	517.7	437.8	526.5	560.0
53°	383.9	418.7	528.4	508.9	399.7	478.7	593.5	491.2	417.8	501.4	533.0
53.5°	369.9	404.3	503.8	482.4	381.1	454.0	562.8	467.1	400.1	476.3	507.9
54°	356.9	390.8	479.6	458.2	362.5	431.3	534.4	443.8	382.9	452.6	483.8
54.5°	344.4	377.4	457.8	435.0	344.4	412.7	506.6	421.5	365.3	430.3	461.9
55°	332.7	364.3	436.8	413.1	328.6	393.6	481.5	402.9	348.1	412.2	441.0
55.5°	322.5	351.3	417.3	393.6	316.0	375.0	455.9	384.8	332.3	394.1	420.6
56°	315.1	338.8	398.7	374.6	306.3	356.0	432.2	366.7	318.8	376.0	403.8
56.5°	309.5	326.2	381.5	357.4	300.2	337.4	413.1	348.5	307.6	358.3	386.7
57°	304.4	315.5	365.7	341.1	294.6	321.6	393.6	332.3	300.2	340.2	369.5
57.5°	298.8	305.8	350.4	325.8	289.5	307.6	374.6	317.4	294.6	324.8	352.7
58°	293.7	299.3	336.9	311.4	284.4	296.5	355.5	304.9	289.5	310.9	339.3
58.5°	288.6	293.7	324.8	299.7	279.3	289.5	336.0	294.2	284.4	299.7	326.2
59°	283.0	288.1	313.2	292.3	273.7	283.5	321.6	287.2	278.8	290.9	314.2
59.5°	277.4	283.0	303.0	286.3	268.6	278.4	308.6	281.2	273.7	284.9	303.5
60°	271.9	277.9	293.2	280.7	263.5	273.3	297.0	276.0	268.1	279.3	293.2
60.5°	265.8	272.3	284.4	275.6	258.4	267.7	286.7	270.5	263.0	274.2	283.9
61°	260.7	266.8	276.0	270.0	253.3	262.6	277.9	265.4	257.5	269.1	275.6
61.5°	255.1	261.2	268.1	264.4	248.2	257.5	269.1	260.2	251.9	263.5	267.7
62°	249.6	255.6	261.2	259.3	243.5	252.3	261.2	254.7	246.8	258.4	260.2
62.5°	243.5	249.6	253.7	254.2	238.4	247.2	253.7	249.1	241.7	252.8	252.8
63°	238.4	244.0	247.2	249.1	233.3	241.7	246.8	244.0	236.1	247.2	246.3
63.5°	232.8	238.4	240.7	243.5	228.2	236.5	240.3	238.4	231.0	242.1	240.3
64°	227.3	232.8	235.2	238.4	223.5	231.4	233.8	232.8	225.9	236.5	234.2
64.5°	221.7	227.7	229.6	233.3	218.4	226.3	228.2	227.7	220.3	231.0	228.6
65°	216.6	221.7	224.5	228.2	213.8	221.7	223.1	222.1	215.2	225.9	223.1
65.5°	211.0	216.1	219.4	223.1	208.7	216.6	217.5	217.0	210.1	220.3	218.0
66°	205.4	211.0	213.8	218.0	204.0	211.5	212.4	211.5	204.9	215.2	212.8





TEST NUMBER: P776641

CATALOG NUMBER: HCDJBL54050CSD-HCD4TSQMW-5000lm-3000K

**CANDELA DISTRIBUTION (continued):**

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
67.5°	189.1	194.3	198.0	202.6	189.6	196.6	197.0	195.6	189.6	199.4	197.5
68°	184.0	188.7	192.9	197.5	185.0	191.5	191.5	190.5	184.5	194.3	192.4
68.5°	178.5	183.1	187.3	192.4	179.8	186.8	186.4	185.4	179.4	188.7	187.3
69°	173.3	178.0	182.2	187.3	175.2	181.7	181.2	180.3	174.3	183.6	181.7
69.5°	166.8	172.4	176.6	182.6	170.6	176.6	176.1	174.7	169.2	178.5	176.6
70°	161.7	168.7	171.5	177.5	165.9	171.9	170.6	169.6	164.0	173.3	171.5
70.5°	157.1	163.1	165.9	172.4	161.3	167.3	165.4	164.5	159.4	168.2	166.4
71°	152.0	157.5	160.8	168.2	156.6	162.2	160.3	159.4	154.3	163.1	161.3
71.5°	147.3	151.5	155.7	163.1	152.0	157.1	155.2	154.3	149.2	157.5	156.1
72°	141.7	145.9	150.6	158.5	147.3	152.4	150.1	149.2	144.1	152.4	151.0
72.5°	136.6	140.3	145.5	153.4	142.7	147.8	145.0	144.1	139.4	147.3	145.9
73°	131.1	135.2	140.3	148.7	137.6	143.1	139.9	139.0	134.3	142.2	140.8
73.5°	125.9	129.7	135.2	143.6	132.9	138.0	135.2	133.8	129.2	137.1	135.7
74°	120.4	124.5	130.1	139.0	128.7	133.4	130.1	128.7	124.5	132.0	130.6
74.5°	115.3	119.0	124.5	133.8	124.1	128.7	125.0	123.6	119.4	126.9	125.9
75°	110.1	113.4	119.4	129.2	119.0	123.6	120.4	118.5	114.3	121.8	120.8
75.5°	105.0	108.3	114.3	124.1	114.3	119.0	115.3	113.4	109.7	116.6	115.7
76°	99.5	102.7	109.2	119.4	109.7	114.3	110.1	108.3	104.6	111.5	110.6
76.5°	94.3	97.6	104.1	114.8	105.5	109.7	105.5	103.2	99.9	106.9	105.5
77°	89.2	92.0	99.0	109.7	100.8	105.0	100.8	98.1	94.8	101.8	100.4
77.5°	84.1	86.9	93.9	105.0	96.2	100.4	96.2	92.9	90.2	96.7	95.7
78°	79.0	81.3	89.2	99.9	91.6	95.3	91.1	87.8	85.5	91.6	90.6
78.5°	73.9	76.2	84.1	95.3	86.9	90.6	86.4	82.7	80.4	86.4	85.5
79°	68.8	70.6	79.5	90.2	82.7	86.0	81.8	77.6	75.8	81.3	80.9
79.5°	63.7	65.5	74.4	85.5	78.1	81.3	77.1	72.5	71.1	76.7	76.2
80°	58.6	60.4	69.7	80.9	73.9	76.7	72.5	67.9	66.5	71.6	71.6
80.5°	53.9	55.3	65.1	75.8	69.2	72.0	68.3	62.7	61.8	66.5	66.5
81°	48.8	49.7	60.4	71.1	65.1	67.4	63.7	58.1	57.2	61.3	62.3
81.5°	43.7	44.6	55.8	66.5	60.4	63.2	59.5	53.9	52.5	56.7	57.6
82°	38.6	40.0	51.1	61.8	56.2	58.6	54.8	49.3	47.4	51.6	53.0
82.5°	33.9	35.3	46.9	57.6	52.0	54.4	50.7	45.1	42.8	46.5	48.8
83°	28.8	31.1	42.8	53.0	47.9	49.7	46.5	40.9	38.6	42.3	44.6
83.5°	23.7	26.5	38.6	48.8	43.2	45.5	42.8	36.7	33.9	37.6	40.9
84°	19.1	22.8	34.4	44.1	39.0	40.9	38.6	32.5	29.3	33.0	37.2
84.5°	16.7	19.1	30.7	40.0	34.9	36.7	34.9	28.8	24.6	28.8	33.5
85°	14.4	16.3	27.0	35.3	30.2	32.5	30.7	24.6	20.0	24.2	29.7
85.5°	11.6	13.5	22.8	31.1	26.0	27.9	27.0	20.9	16.7	20.4	25.6
86°	9.3	11.2	19.1	26.5	21.8	23.7	23.2	18.1	13.9	17.7	22.3
86.5°	7.0	8.8	15.8	22.3	17.7	19.5	19.5	15.3	12.1	15.3	18.6
87°	5.1	6.0	12.1	18.1	13.5	15.3	15.8	12.5	10.2	13.0	14.9
87.5°	2.8	3.7	8.8	13.9	9.3	11.2	12.1	9.8	7.9	10.2	11.2
88°	0.9	1.4	5.1	10.2	5.6	7.0	8.4	7.4	6.0	7.9	7.9
88.5°	0.0	0.5	1.9	6.0	1.9	3.3	4.6	4.6	4.2	5.6	4.2



TEST NUMBER: P776641

CATALOG NUMBER: HCDJBL54050CSD-HCD4TSQMW-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	0.5	0.0	0.0	0.0	0.5	0.5	0.0	0.5	0.5



TEST NUMBER: P776641

CATALOG NUMBER: HCDJBL54050CSD-HCD4TSQMW-5000lm-3000K

**CANDELA DISTRIBUTION (continued):**

	247.5°	270°	292.5°	315°	337.5°	360°
0°	2919.9	2919.9	2919.9	2919.9	2919.9	2919.9
0.5°	2916.6	2918.9	2918.9	2919.4	2919.9	2919.4
1°	2915.7	2917.6	2917.1	2917.6	2918.5	2918.0
1.5°	2913.8	2915.7	2914.8	2915.2	2916.2	2915.7
2°	2912.0	2913.8	2912.4	2912.4	2913.4	2913.4
2.5°	2909.7	2911.5	2909.7	2909.7	2910.6	2911.0
3°	2906.9	2908.7	2906.4	2906.4	2907.3	2907.8
3.5°	2903.6	2905.9	2903.6	2903.1	2904.1	2905.0
4°	2900.4	2902.2	2899.9	2899.4	2900.4	2901.8
4.5°	2896.6	2899.0	2895.7	2895.2	2896.2	2897.6
5°	2892.5	2894.8	2891.1	2891.1	2892.0	2893.4
5.5°	2888.3	2890.6	2886.4	2886.0	2887.3	2889.2
6°	2883.6	2885.5	2881.3	2880.8	2882.2	2884.6
6.5°	2878.5	2880.4	2876.2	2875.7	2876.7	2879.4
7°	2872.9	2874.8	2870.2	2869.7	2871.1	2873.4
7.5°	2866.9	2869.2	2864.1	2863.6	2864.6	2867.4
8°	2860.9	2862.7	2857.6	2857.1	2858.5	2861.3
8.5°	2854.4	2856.2	2850.6	2850.2	2851.6	2854.4
9°	2847.8	2849.2	2843.7	2842.7	2844.1	2847.4
9.5°	2840.4	2841.8	2836.2	2835.3	2836.7	2839.9
10°	2832.5	2834.8	2828.3	2826.9	2828.8	2832.0
10.5°	2824.6	2826.9	2820.0	2819.0	2820.0	2823.7
11°	2816.2	2818.1	2811.6	2810.2	2811.6	2815.3
11.5°	2807.9	2809.3	2802.3	2800.9	2802.8	2806.5
12°	2798.6	2800.4	2793.0	2791.6	2793.0	2796.7
12.5°	2789.3	2790.7	2783.2	2781.9	2782.8	2787.0
13°	2779.5	2780.9	2773.0	2771.6	2773.0	2776.7
13.5°	2768.8	2770.7	2762.8	2761.4	2762.3	2766.5
14°	2758.6	2760.0	2751.6	2750.3	2751.6	2755.8
14.5°	2747.5	2748.9	2740.5	2738.6	2739.6	2744.2
15°	2736.3	2737.2	2728.9	2727.0	2727.5	2732.1
15.5°	2724.2	2725.2	2716.3	2714.9	2714.9	2719.6
16°	2712.1	2713.1	2703.8	2702.4	2702.9	2707.0
16.5°	2699.1	2700.5	2691.2	2689.4	2689.8	2693.6
17°	2686.1	2687.1	2678.2	2676.4	2676.4	2680.1
17.5°	2672.6	2673.6	2664.3	2662.4	2662.0	2665.7
18°	2659.2	2659.2	2650.3	2648.5	2648.0	2651.7
18.5°	2644.3	2644.8	2635.5	2634.5	2633.1	2636.4
19°	2629.9	2630.4	2620.6	2619.2	2617.8	2621.5
19.5°	2615.0	2615.0	2605.3	2604.3	2602.5	2605.7
20°	2599.2	2599.7	2589.5	2588.5	2586.2	2589.9
20.5°	2583.4	2583.9	2573.7	2571.8	2569.9	2574.1
21°	2567.2	2567.6	2556.9	2556.0	2553.2	2557.9



TEST NUMBER: P776641

CATALOG NUMBER: HCDJBL54050CSD-HCD4TSQMW-5000lm-3000K

**CANDELA DISTRIBUTION (continued):**

	247.5°	270°	292.5°	315°	337.5°	360°
22.5°	2516.5	2517.4	2505.3	2503.0	2501.2	2505.8
23°	2498.8	2499.8	2487.7	2485.4	2483.5	2488.1
23.5°	2481.6	2481.6	2470.0	2465.8	2465.4	2470.5
24°	2463.5	2464.0	2451.4	2447.3	2446.8	2451.4
24.5°	2444.9	2445.4	2432.4	2427.7	2427.7	2435.2
25°	2425.9	2427.7	2413.8	2408.2	2408.2	2418.0
25.5°	2407.3	2411.5	2394.3	2387.3	2389.6	2390.1
26°	2388.7	2389.6	2374.8	2368.2	2369.6	2359.4
26.5°	2372.0	2356.6	2355.7	2346.4	2352.4	2330.6
27°	2352.9	2331.1	2338.5	2326.4	2333.9	2287.4
27.5°	2322.7	2294.8	2318.1	2304.6	2304.6	2241.8
28°	2292.5	2251.1	2287.4	2283.2	2274.4	2196.8
28.5°	2263.7	2207.0	2257.6	2261.4	2244.2	2153.1
29°	2223.7	2163.8	2228.8	2240.0	2202.8	2110.8
29.5°	2180.5	2120.5	2187.9	2216.7	2159.1	2069.9
30°	2137.3	2079.2	2146.1	2195.4	2114.0	2029.0
30.5°	2095.0	2036.4	2101.5	2173.1	2071.8	1989.0
31°	2053.6	1995.5	2060.1	2150.8	2029.5	1949.1
31.5°	2011.3	1954.2	2017.4	2128.0	1988.1	1908.2
32°	1970.4	1912.4	1976.9	2105.2	1948.6	1863.6
32.5°	1929.5	1868.7	1937.0	2082.9	1910.5	1820.3
33°	1889.1	1824.5	1896.6	2061.5	1871.0	1773.4
33.5°	1847.8	1778.5	1856.1	2042.5	1832.9	1724.1
34°	1804.5	1731.1	1816.2	2021.6	1792.5	1672.6
34.5°	1761.3	1683.2	1773.9	1987.2	1751.1	1624.2
35°	1717.2	1634.4	1730.6	1946.3	1706.5	1574.5
35.5°	1671.2	1585.6	1687.0	1915.6	1662.8	1527.6
36°	1624.7	1539.2	1641.0	1871.5	1615.4	1481.1
36.5°	1577.3	1492.2	1595.9	1816.6	1569.4	1437.4
37°	1530.8	1448.1	1549.4	1761.8	1521.1	1393.3
37.5°	1484.8	1403.5	1503.9	1707.4	1476.0	1350.5
38°	1440.2	1359.8	1457.8	1653.5	1431.4	1307.7
38.5°	1397.0	1316.6	1415.1	1601.9	1388.6	1264.5
39°	1352.8	1274.3	1371.4	1551.7	1346.8	1219.9
39.5°	1310.5	1229.7	1331.0	1503.4	1305.9	1174.8
40°	1269.2	1185.1	1289.2	1456.9	1265.9	1129.3
40.5°	1228.7	1141.8	1247.8	1412.3	1225.9	1084.7
41°	1186.0	1097.7	1206.9	1368.6	1185.5	1041.0
41.5°	1144.2	1054.5	1166.5	1324.9	1143.7	999.2
42°	1101.9	1012.2	1124.6	1282.2	1102.3	957.3
42.5°	1061.0	971.3	1082.8	1240.8	1061.4	918.3
43°	1019.1	930.8	1041.9	1198.1	1020.1	879.7
43.5°	977.8	891.8	1000.6	1154.4	979.6	842.1



TEST NUMBER: P776641

CATALOG NUMBER: HCDJBL54050CSD-HCD4TSQMW-5000lm-3000K

**CANDELA DISTRIBUTION (continued):**

	247.5°	270°	292.5°	315°	337.5°	360°
45°	862.5	780.3	883.9	1023.8	865.3	732.9
45.5°	827.2	745.0	848.1	982.4	830.0	698.9
46°	790.5	710.1	812.3	942.5	794.7	666.4
46.5°	755.6	676.2	776.6	903.0	760.3	635.3
47°	721.7	644.1	742.6	865.8	726.8	605.1
47.5°	688.7	612.5	707.8	830.5	694.3	578.1
48°	655.7	584.6	674.8	797.0	662.2	553.0
48.5°	625.1	556.7	643.6	764.9	631.6	530.3
49°	594.4	532.1	613.4	732.9	602.3	509.3
49.5°	566.5	509.3	584.6	702.7	574.9	489.4
50°	538.6	488.0	557.2	672.9	549.3	471.2
50.5°	514.0	468.4	532.1	644.1	525.1	455.0
51°	490.8	451.2	507.9	616.2	503.3	439.6
51.5°	469.4	435.0	487.0	588.8	482.9	424.8
52°	449.9	420.1	468.0	562.8	464.3	410.8
52.5°	432.2	405.7	449.4	537.7	447.1	396.9
53°	415.9	391.8	432.7	514.0	430.8	383.9
53.5°	402.0	378.3	416.9	491.2	415.5	369.9
54°	388.5	364.8	401.5	469.8	401.1	356.9
54.5°	375.0	352.3	388.5	449.4	387.1	344.4
55°	361.1	339.7	374.6	430.3	374.6	332.7
55.5°	347.6	327.6	361.1	412.2	361.1	322.5
56°	335.5	317.4	348.5	395.5	348.5	315.1
56.5°	323.0	309.0	336.0	379.7	336.0	309.5
57°	311.8	302.5	323.9	364.3	324.4	304.4
57.5°	302.1	297.4	312.8	350.4	313.7	298.8
58°	293.7	291.8	303.5	337.4	304.9	293.7
58.5°	287.7	286.7	296.0	325.3	297.9	288.6
59°	282.6	281.6	290.5	314.2	292.8	283.0
59.5°	277.4	277.0	284.9	303.0	287.2	277.4
60°	272.3	271.4	279.8	293.7	282.1	271.9
60.5°	267.2	266.8	274.7	284.9	276.0	265.8
61°	261.6	261.6	269.1	276.5	270.9	260.7
61.5°	256.5	256.5	264.0	268.6	265.4	255.1
62°	251.4	251.4	258.9	261.2	259.8	249.6
62.5°	246.3	246.3	253.3	254.2	253.7	243.5
63°	241.2	241.7	248.2	247.7	248.2	238.4
63.5°	236.1	236.5	243.1	241.7	242.6	232.8
64°	231.0	231.9	237.9	235.6	237.0	227.3
64.5°	225.9	226.8	232.4	230.5	231.4	221.7
65°	221.2	221.7	227.7	225.4	225.9	216.6
65.5°	216.1	217.0	222.6	219.8	220.3	211.0
66°	211.0	211.9	217.0	214.7	214.7	205.4



TEST NUMBER: P776641

CATALOG NUMBER: HCDJBL54050CSD-HCD4TSQMW-5000lm-3000K

**CANDELA DISTRIBUTION (continued):**

	247.5°	270°	292.5°	315°	337.5°	360°
67.5°	196.1	197.5	202.2	199.4	198.0	189.1
68°	191.0	192.9	197.0	193.8	192.4	184.0
68.5°	186.4	187.7	191.9	188.2	186.8	178.5
69°	181.2	183.1	186.8	183.1	181.7	173.3
69.5°	176.1	178.5	181.7	177.5	176.1	166.8
70°	171.5	173.8	176.6	172.4	170.6	161.7
70.5°	166.4	168.2	171.9	167.8	165.4	157.1
71°	161.7	163.6	168.7	162.7	159.9	152.0
71.5°	156.6	159.4	163.6	157.1	154.8	147.3
72°	152.0	154.8	158.0	152.0	149.6	141.7
72.5°	146.9	150.1	152.9	146.9	144.1	136.6
73°	142.2	145.9	147.8	141.7	138.5	131.1
73.5°	137.6	140.8	142.7	136.2	133.4	125.9
74°	132.4	136.2	138.0	131.1	127.8	120.4
74.5°	127.8	131.5	132.9	125.9	122.2	115.3
75°	122.7	126.9	127.8	120.8	117.1	110.1
75.5°	118.0	122.2	123.2	115.7	111.5	105.0
76°	112.9	117.6	118.0	110.1	106.4	99.5
76.5°	108.3	112.5	113.4	105.0	100.8	94.3
77°	103.6	107.8	108.3	100.4	95.3	89.2
77.5°	98.5	103.2	103.6	95.3	90.2	84.1
78°	93.9	98.5	98.5	90.2	84.6	79.0
78.5°	88.8	93.9	93.9	85.0	79.5	73.9
79°	84.1	89.2	88.8	80.4	73.9	68.8
79.5°	79.5	84.6	84.1	75.3	68.8	63.7
80°	74.4	79.9	79.0	70.6	63.2	58.6
80.5°	69.7	75.3	74.4	66.0	58.1	53.9
81°	65.1	71.1	69.7	61.3	53.0	48.8
81.5°	60.9	66.5	65.1	56.7	48.3	43.7
82°	56.2	61.8	60.4	52.0	43.2	38.6
82.5°	51.6	57.6	55.8	47.9	39.0	33.9
83°	47.4	53.0	51.1	43.7	34.4	28.8
83.5°	42.8	48.3	46.5	39.5	30.2	23.7
84°	38.6	44.1	41.8	35.3	26.0	19.1
84.5°	33.9	40.0	37.6	31.6	22.3	16.7
85°	29.7	35.3	33.0	27.4	19.1	14.4
85.5°	25.1	31.1	28.3	23.7	16.3	11.6
86°	20.9	26.5	23.7	19.5	13.5	9.3
86.5°	16.3	22.3	19.5	15.8	10.7	7.0
87°	12.1	17.7	15.3	12.1	7.9	5.1
87.5°	7.9	13.9	11.6	8.8	5.1	2.8
88°	4.2	9.8	7.9	5.1	2.3	0.9
88.5°	1.4	5.6	4.2	1.4	0.9	0.0



TEST NUMBER: P776641

CATALOG NUMBER: HCDJBL54050CSD-HCD4TSQMW-5000lm-3000K

**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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Cooper Lighting Solutions Photometric Lab  
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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°	2540.7	2559.3	2606.2	2646.2	2643.8	2659.2	2668.5	2664.3	2654.5	2638.7	2600.1
22°	2523.0	2542.5	2590.4	2631.3	2629.9	2644.8	2654.1	2650.3	2640.6	2624.8	2583.9



44°	805.4	922.9	1197.1	1144.2	962.0	1114.0	1334.7	1136.3	999.2	1126.0	1206.4
44.5°	768.7	885.8	1149.7	1102.8	920.6	1072.6	1286.4	1095.4	957.3	1087.0	1159.0



66.5°	200.3	205.4	208.7	212.8	198.9	206.3	207.3	206.3	199.8	210.1	207.7
67°	194.7	199.8	203.6	207.7	194.3	201.2	202.2	201.2	194.7	204.5	202.6



89°	0.0	0.5	0.5	2.3	0.5	0.9	1.9	2.3	2.3	3.3	1.9
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°	2550.9	2551.4	2540.2	2538.3	2536.0	2540.7
22°	2534.2	2534.2	2523.0	2521.1	2518.8	2523.0



44°	938.7	853.7	961.1	1110.2	939.7	805.4
44.5°	901.1	816.5	922.9	1067.0	902.5	768.7

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66.5°	205.9	207.3	212.4	209.6	209.1	200.3
67°	201.2	202.6	207.3	204.5	203.6	194.7

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89°	0.5	1.9	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)