

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: P776317

Luminaire Tested: HCDJBL3040CSD-HCD4TSQH-4000lm-3500K

Issue Date: 2/7/2024

Test Information

Test Method: LM-79-2019
Report Number: P776317
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: HCDJBL3040CSD-HCD4TSQH-4000lm-3500K
Description: 4 INCH SQUARE MEDIUM HAZE TRIM
Light Source: SELECTABLE LUMENS AND CCT ARRAY 90CRI / 3500K CCT
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 3991.3 lumens
Efficiency: N/A
Efficacy: 103.7 lumens/watt
Spacing Criteria (0/90/45): 1.05 / 1.05 / 1.09
Luminous Opening: Rectangular (W 0.33' x L: 0.33' x H: 0')
CIE Type: Direct

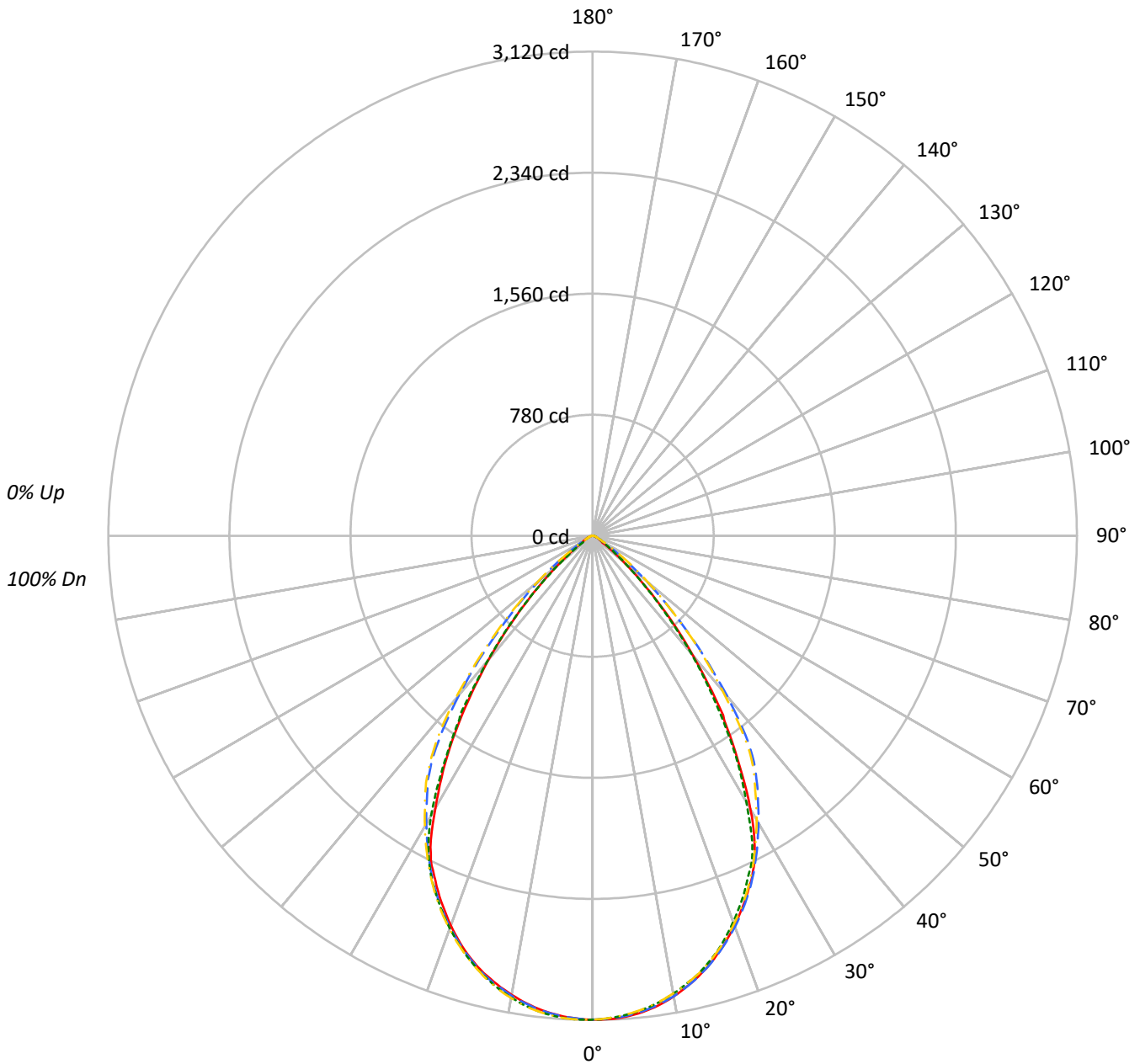
Input Watts (W): 38.5
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT



TEST NUMBER: P776317

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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	113	110	107	104	110	107	105	103	103	101	100	100	98	97	96	95	94	92			92
2	106	101	96	92	104	99	95	91	96	92	89	93	90	87	90	88	85	84			84
3	100	93	87	82	98	91	86	82	88	84	80	86	82	79	84	81	78	76			76
4	94	85	79	74	92	84	78	74	82	77	73	80	76	72	78	74	71	70			70
5	88	79	72	67	87	78	72	67	76	71	66	74	70	66	73	69	65	64			64
6	83	73	66	61	82	72	66	61	71	65	61	69	64	60	68	63	60	58			58
7	78	68	61	56	77	67	61	56	66	60	56	65	59	56	63	59	55	54			54
8	74	63	56	52	73	63	56	52	61	56	51	60	55	51	59	55	51	49			49
9	70	59	52	48	69	58	52	48	57	52	48	57	51	47	56	51	47	46			46
10	66	55	49	44	65	55	49	44	54	48	44	53	48	44	52	47	44	43			43

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°	270°
0°	308160	308160	308160	308160
5°	307333	305994	306381	307611
10°	302436	300599	301432	303309
15°	293868	292282	293827	295168
20°	281172	278542	281014	283181
25°	265104	260687	263457	267350
30°	232227	226189	231268	237351
35°	182227	178341	185774	188272
40°	129649	126887	134629	135958
45°	79258	77259	84024	84527
50°	38919	40134	43317	41918
55°	14579	20128	21231	16302
60°	10596	13423	13581	10754
65°	8373	10595	10782	8654
70°	6647	8496	8612	6994
75°	5156	6683	6683	5767
80°	3415	5180	4952	4497
85°	1361	4083	2268	3175

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 315°
 Vertical Angle: 45°
 Luminance: 121570 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	292.5	7.3
10°-20°	806.3	20.2
20°-30°	1109.6	27.8
30°-40°	1019.4	25.5
40°-50°	551.3	13.8
50°-60°	148.6	3.7
60°-70°	42.4	1.1
70°-80°	17.8	0.4
80°-90°	3.4	0.1
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°	2208.4	55.3
0°-40°	3227.8	80.9
0°-60°	3927.7	98.4
0°-90°	3991.3	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3991.3	100.0

CANDELA DISTRIBUTION:

	0°	90°	180°	270°	360°	Flux
0°	3118	3118	3118	3118	3118	
5°	3098	3084	3088	3100	3098	293
15°	2872	2856	2871	2884	2872	806
25°	2431	2390	2416	2451	2431	1103
35°	1510	1478	1540	1560	1510	939
45°	567	553	601	605	567	447
55°	85	117	123	95	85	99
65°	36	45	46	37	36	36
75°	14	18	18	15	14	15
85°	1	4	2	3	1	2
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°	3117.7	3117.7	3117.7	3117.7	3117.7	3117.7	3117.7	3117.7	3117.7	3117.7	3117.7
0.5°	3119.3	3118.1	3117.0	3115.8	3117.7	3115.8	3116.6	3117.0	3118.1	3118.1	3116.6
1°	3119.3	3117.3	3115.8	3115.0	3116.2	3114.2	3114.6	3115.0	3116.6	3117.3	3115.8
1.5°	3118.1	3115.8	3115.4	3113.0	3113.4	3111.0	3112.2	3112.6	3115.0	3115.4	3113.8
2°	3117.3	3114.6	3113.0	3111.0	3110.2	3108.6	3109.0	3109.8	3111.8	3113.4	3111.8
2.5°	3115.4	3112.6	3111.0	3108.2	3107.0	3105.0	3105.8	3106.2	3109.4	3110.6	3109.4
3°	3113.0	3109.0	3108.2	3105.4	3103.8	3101.1	3101.9	3102.6	3106.2	3108.2	3106.2
3.5°	3109.8	3105.8	3104.6	3101.9	3099.9	3096.7	3097.1	3098.3	3102.3	3104.6	3103.0
4°	3106.2	3101.9	3101.9	3097.9	3095.1	3092.3	3092.3	3093.9	3097.5	3101.1	3099.1
4.5°	3102.3	3097.1	3096.7	3093.5	3089.5	3086.4	3087.2	3088.7	3093.1	3097.1	3094.3
5°	3097.5	3091.9	3091.9	3087.9	3084.0	3080.8	3081.2	3083.2	3087.9	3091.5	3089.1
5.5°	3091.5	3086.4	3086.8	3082.4	3077.6	3074.0	3074.8	3076.8	3082.0	3086.8	3083.6
6°	3086.0	3079.6	3080.4	3076.0	3070.9	3066.9	3068.1	3070.5	3075.2	3080.4	3077.2
6.5°	3079.2	3072.8	3074.0	3069.7	3063.3	3059.3	3060.5	3062.9	3068.5	3074.4	3070.9
7°	3071.7	3064.9	3066.5	3061.7	3055.4	3051.0	3053.0	3055.8	3060.9	3067.3	3063.7
7.5°	3063.7	3057.0	3058.9	3054.6	3046.6	3042.7	3044.2	3047.4	3052.6	3059.7	3055.8
8°	3055.4	3048.2	3051.4	3045.0	3037.5	3032.7	3035.1	3037.9	3044.2	3051.4	3047.4
8.5°	3045.8	3039.1	3042.3	3035.5	3027.2	3023.6	3026.0	3028.7	3034.7	3042.3	3038.7
9°	3035.9	3029.5	3032.7	3026.0	3017.2	3012.9	3015.6	3018.8	3024.8	3032.7	3029.5
9.5°	3025.2	3018.0	3023.2	3016.0	3006.1	3002.1	3004.9	3008.1	3014.0	3023.2	3019.2
10°	3013.3	3006.9	3012.1	3004.5	2995.0	2991.0	2994.2	2997.4	3003.3	3012.9	3008.9
10.5°	3001.7	2994.6	3000.9	2993.0	2983.5	2979.5	2983.1	2985.8	2991.8	3002.1	2997.4
11°	2989.4	2982.3	2990.2	2981.1	2971.5	2967.6	2971.1	2973.9	2980.3	2990.6	2985.8
11.5°	2976.7	2969.5	2976.7	2968.8	2958.4	2954.4	2958.0	2962.8	2968.8	2978.7	2973.5
12°	2962.8	2955.6	2964.0	2955.2	2945.3	2941.7	2945.3	2949.7	2955.6	2967.2	2965.2
12.5°	2949.3	2941.3	2949.7	2941.7	2932.2	2928.6	2932.2	2937.0	2942.5	2953.7	2951.7
13°	2935.0	2927.0	2936.2	2927.4	2919.5	2915.5	2919.1	2923.9	2929.4	2940.5	2938.2
13.5°	2920.3	2911.5	2921.5	2912.7	2906.0	2902.4	2906.0	2911.1	2916.3	2927.4	2924.7
14°	2904.8	2896.4	2905.6	2897.6	2890.1	2886.1	2890.9	2895.2	2903.2	2914.3	2911.5
14.5°	2888.1	2879.4	2889.3	2882.1	2873.4	2869.8	2874.6	2879.0	2887.7	2901.2	2892.9
15°	2871.8	2862.7	2873.4	2866.2	2856.3	2853.5	2857.5	2863.1	2871.4	2885.3	2876.6
15.5°	2854.3	2845.6	2856.7	2848.8	2838.8	2835.7	2840.0	2845.6	2854.3	2869.0	2859.5
16°	2836.8	2827.7	2838.4	2830.9	2821.0	2818.2	2822.1	2828.5	2836.8	2851.9	2842.4
16.5°	2817.8	2810.2	2820.2	2813.0	2801.9	2799.1	2804.3	2810.2	2819.4	2834.1	2824.5
17°	2799.1	2790.4	2802.3	2794.7	2782.4	2780.4	2785.6	2791.9	2801.1	2816.2	2805.9
17.5°	2779.6	2771.3	2782.8	2775.3	2762.1	2761.0	2766.1	2772.1	2780.8	2797.9	2786.8
18°	2759.4	2751.0	2763.7	2755.0	2739.9	2740.3	2746.7	2752.6	2759.8	2778.8	2767.7
18.5°	2737.5	2730.0	2743.1	2735.1	2717.6	2718.8	2726.0	2732.0	2738.7	2758.6	2747.8
19°	2716.9	2708.5	2723.2	2714.1	2694.6	2696.6	2705.3	2710.5	2716.9	2737.5	2727.2
19.5°	2695.0	2687.1	2702.2	2691.4	2672.0	2673.9	2684.3	2688.6	2694.6	2715.7	2706.1
20°	2673.1	2664.8	2681.1	2668.4	2648.1	2650.1	2662.8	2666.0	2671.6	2693.4	2685.1
20.5°	2650.1	2642.2	2659.2	2644.9	2624.3	2626.3	2640.2	2642.6	2648.1	2670.8	2662.4
21°	2626.7	2618.3	2635.8	2620.7	2599.6	2602.0	2617.5	2618.7	2624.3	2646.9	2640.2



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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°	2555.1	2545.6	2565.5	2545.2	2524.9	2526.9	2546.4	2544.0	2550.0	2573.4	2570.2
23°	2528.5	2520.6	2540.8	2518.6	2498.3	2500.7	2522.2	2517.4	2524.9	2548.0	2545.6
23.5°	2503.9	2495.5	2515.0	2493.6	2470.5	2475.3	2496.3	2491.6	2498.3	2522.2	2519.8
24°	2478.5	2468.9	2490.0	2466.5	2441.9	2448.3	2470.1	2465.4	2471.3	2496.3	2493.6
24.5°	2455.4	2442.7	2463.4	2440.3	2415.3	2420.5	2442.3	2438.7	2443.1	2469.7	2466.5
25°	2430.8	2414.9	2436.0	2411.3	2390.3	2391.8	2414.9	2411.3	2415.7	2442.3	2439.5
25.5°	2398.6	2389.1	2407.7	2382.7	2365.2	2362.8	2386.3	2383.1	2389.9	2413.7	2411.7
26°	2369.6	2364.0	2378.3	2352.9	2340.2	2334.6	2357.7	2354.5	2365.6	2385.1	2383.9
26.5°	2338.2	2339.4	2350.1	2324.7	2303.6	2308.0	2327.9	2325.1	2335.8	2356.1	2354.5
27°	2300.9	2306.8	2320.7	2297.3	2265.1	2282.6	2298.1	2296.9	2296.9	2329.5	2325.1
27.5°	2261.9	2275.4	2290.9	2271.9	2228.9	2256.4	2267.9	2269.5	2262.7	2304.4	2295.3
28°	2221.0	2242.1	2259.9	2246.0	2179.3	2226.2	2237.3	2243.6	2220.6	2277.0	2265.1
28.5°	2178.1	2207.1	2230.1	2217.4	2128.8	2185.2	2206.7	2213.9	2172.5	2238.1	2235.3
29°	2133.6	2169.0	2198.8	2178.1	2080.4	2151.5	2176.1	2175.7	2124.1	2202.7	2204.3
29.5°	2084.7	2129.2	2169.0	2141.5	2030.7	2109.8	2143.9	2140.7	2074.4	2167.0	2174.1
30°	2034.7	2085.9	2138.4	2102.6	1981.8	2060.5	2112.9	2101.4	2026.3	2120.9	2143.1
30.5°	1981.8	2044.2	2107.0	2054.9	1934.1	2011.2	2080.7	2054.1	1977.0	2071.6	2112.1
31°	1928.6	1996.1	2075.2	2005.3	1886.9	1963.5	2048.2	2007.6	1930.6	2023.9	2080.4
31.5°	1874.5	1949.2	2043.4	1956.8	1839.2	1914.7	2015.2	1958.8	1884.1	1975.1	2047.8
32°	1819.3	1897.2	2011.2	1908.7	1792.7	1867.4	1983.4	1911.1	1837.2	1927.8	2016.4
32.5°	1766.1	1847.5	1981.4	1860.2	1743.4	1821.3	1950.8	1863.4	1789.5	1880.5	1984.2
33°	1714.0	1794.7	1952.4	1813.4	1693.8	1776.0	1920.2	1818.1	1742.2	1834.0	1954.0
33.5°	1662.4	1741.0	1921.4	1766.9	1640.1	1729.5	1890.4	1771.2	1694.2	1787.1	1927.4
34°	1611.9	1689.4	1886.1	1720.8	1587.7	1683.4	1861.4	1726.7	1644.1	1741.0	1900.0
34.5°	1561.1	1637.3	1855.5	1673.9	1532.1	1635.4	1830.8	1680.7	1591.7	1694.6	1859.8
35°	1510.2	1585.3	1824.1	1626.6	1478.0	1589.7	1797.1	1636.5	1539.6	1647.7	1819.3
35.5°	1460.5	1536.0	1790.3	1578.1	1423.6	1538.8	1759.7	1589.7	1487.6	1599.2	1784.4
36°	1429.9	1487.2	1750.6	1529.3	1372.3	1488.3	1722.0	1544.0	1435.1	1550.7	1741.0
36.5°	1374.3	1439.5	1704.9	1478.8	1320.3	1437.1	1673.9	1495.5	1383.1	1501.1	1693.0
37°	1317.5	1391.4	1662.0	1427.6	1270.6	1385.8	1625.8	1447.0	1330.2	1450.2	1643.7
37.5°	1260.7	1342.9	1615.9	1377.9	1221.7	1333.4	1574.2	1398.2	1280.6	1398.6	1594.0
38°	1203.9	1294.9	1562.3	1328.2	1174.1	1283.3	1518.1	1348.9	1232.1	1348.9	1543.6
38.5°	1153.0	1246.8	1506.6	1279.0	1126.0	1234.9	1462.5	1298.8	1184.0	1297.6	1493.1
39°	1102.6	1198.3	1452.6	1229.3	1079.9	1187.6	1406.9	1250.0	1135.9	1249.2	1441.5
39.5°	1053.3	1149.0	1399.0	1179.6	1031.4	1143.1	1353.7	1201.9	1089.0	1201.1	1390.2
40°	1004.8	1100.6	1345.3	1132.4	983.4	1096.2	1301.2	1155.8	1043.4	1153.8	1338.6
40.5°	958.3	1051.3	1291.7	1086.7	934.9	1051.3	1250.8	1108.5	995.7	1106.9	1287.7
41°	911.8	1004.4	1237.6	1041.8	888.4	1007.6	1201.5	1064.0	948.4	1061.6	1235.3
41.5°	865.8	958.3	1184.0	997.3	840.7	964.3	1153.0	1020.3	900.3	1017.5	1184.4
42°	821.3	913.8	1132.8	952.0	795.8	918.6	1105.7	976.6	854.2	972.6	1132.4
42.5°	776.8	869.3	1082.7	908.3	752.1	873.7	1060.0	933.7	809.3	928.5	1081.5
43°	733.4	826.4	1033.0	864.2	709.6	830.0	1014.7	890.0	765.6	883.6	1029.8
43.5°	688.9	784.7	984.6	820.5	667.9	787.5	969.5	847.1	722.7	839.5	980.6



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
45°	567.0	662.3	842.3	693.7	552.7	663.1	834.4	721.5	601.1	712.4	836.7
45.5°	528.8	622.2	795.8	654.4	515.7	625.8	791.1	680.6	563.0	672.3	792.2
46°	492.3	584.1	751.3	615.4	479.6	588.0	747.8	642.1	526.0	633.3	747.8
46.5°	456.5	546.7	708.0	578.9	445.8	551.9	706.4	603.9	490.3	596.0	705.2
47°	422.7	510.9	665.5	543.1	413.6	516.5	666.7	567.4	454.9	559.0	664.7
47.5°	391.4	476.0	624.6	507.8	383.4	482.3	628.2	530.8	422.0	522.5	625.0
48°	360.8	442.6	585.6	473.2	358.0	449.0	592.4	496.2	390.6	488.7	586.4
48.5°	332.2	411.2	548.3	440.2	332.6	417.2	556.6	463.3	363.1	454.9	549.1
49°	304.7	381.0	512.5	409.6	307.1	387.0	522.9	430.3	336.1	422.7	514.9
49.5°	278.1	352.0	478.8	379.4	282.1	360.8	490.7	399.3	308.7	391.8	478.8
50°	253.1	324.2	445.8	350.0	261.0	334.5	459.7	372.7	281.7	364.3	445.4
50.5°	230.0	297.2	413.2	321.8	241.6	308.3	430.3	346.1	259.8	336.5	414.4
51°	208.6	272.2	383.0	296.4	224.9	282.1	400.5	319.0	239.6	308.7	385.4
51.5°	188.7	248.7	354.0	272.6	209.0	260.6	374.7	292.4	221.3	281.3	358.4
52°	170.1	226.5	327.0	250.3	193.9	240.8	349.6	265.8	204.2	257.9	331.8
52.5°	153.0	205.0	300.4	230.4	179.6	222.5	324.2	243.6	189.1	236.8	305.1
53°	137.1	185.1	276.1	212.2	166.1	205.8	298.8	223.3	174.4	217.7	278.5
53.5°	124.0	167.3	253.1	195.9	153.8	190.7	273.4	205.0	160.9	200.2	254.3
54°	110.9	150.6	231.6	180.4	141.0	176.8	251.9	188.3	147.8	184.4	232.8
54.5°	97.7	134.7	211.0	166.1	128.7	163.3	231.6	172.8	135.1	169.3	213.0
55°	84.6	120.0	193.1	153.4	116.8	150.6	212.6	158.9	123.2	155.7	193.9
55.5°	75.9	109.3	175.6	140.7	106.1	138.7	194.7	145.8	111.2	143.0	176.4
56°	72.7	98.9	159.7	130.3	96.5	126.7	178.0	133.1	100.9	130.7	160.1
56.5°	69.9	88.2	145.0	119.6	89.8	115.2	162.5	121.6	92.6	119.2	145.4
57°	67.5	77.9	134.3	108.9	85.8	104.1	148.2	110.5	86.6	107.7	131.5
57.5°	64.8	67.1	123.2	98.1	82.6	94.2	135.1	99.7	83.4	96.9	119.2
58°	62.4	64.8	112.4	89.0	79.5	85.0	122.8	89.4	80.3	87.8	108.1
58.5°	60.0	62.4	101.7	81.1	76.7	78.3	112.0	81.1	77.1	80.7	97.7
59°	57.6	60.0	91.0	75.1	73.5	74.7	101.7	74.7	74.3	75.9	89.0
59.5°	55.6	57.6	83.0	71.9	70.7	71.5	93.0	71.1	71.5	73.1	81.4
60°	53.6	55.6	76.3	68.7	67.9	68.7	85.0	68.3	68.7	70.3	74.7
60.5°	51.3	53.6	69.9	66.4	65.2	66.4	77.9	65.6	66.0	67.5	68.3
61°	49.3	51.3	64.8	63.6	62.8	63.6	71.5	62.8	63.6	64.8	63.6
61.5°	47.7	49.7	60.0	61.2	60.4	61.2	66.0	60.4	61.2	62.4	58.8
62°	45.7	47.7	56.0	58.4	58.0	58.8	61.2	58.0	58.4	60.0	54.8
62.5°	43.7	45.7	52.0	56.4	55.6	56.4	57.2	55.6	56.4	57.6	51.3
63°	42.1	44.1	48.9	54.0	53.2	54.0	53.2	53.6	54.0	55.2	48.5
63.5°	40.5	42.1	46.1	51.7	51.3	52.0	50.1	51.3	52.0	53.2	45.7
64°	38.9	40.5	44.1	49.7	49.3	50.1	46.9	49.3	49.7	50.9	43.7
64.5°	37.3	38.9	42.5	47.7	47.3	48.1	44.5	47.3	47.7	48.9	41.7
65°	35.8	37.7	40.5	45.7	45.3	46.1	42.5	45.3	46.1	46.9	40.1
65.5°	34.6	36.2	38.9	44.1	43.3	44.1	40.9	43.3	44.1	44.9	38.5
66°	33.0	34.6	37.7	42.1	41.3	42.5	39.3	41.7	42.1	43.3	37.0



TEST NUMBER: P776317

CATALOG NUMBER: HCDJBL3040CSD-HCD4TSQH-4000lm-3500K

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
67.5°	29.0	30.6	33.4	37.0	36.6	37.3	35.0	36.6	37.0	38.1	32.6
68°	27.8	29.4	31.8	35.4	35.0	35.8	33.4	35.0	35.4	36.6	31.4
68.5°	26.6	27.8	30.6	34.2	33.4	34.2	32.2	33.4	33.8	35.0	30.2
69°	25.4	26.6	29.4	32.6	32.2	33.0	30.6	32.2	32.6	33.4	29.0
69.5°	24.2	25.4	28.2	31.4	30.6	31.4	29.4	30.6	31.0	31.8	27.8
70°	23.0	24.2	27.0	29.8	29.4	30.2	28.2	29.4	29.8	30.6	26.2
70.5°	21.9	23.4	25.8	28.6	27.8	29.0	26.6	27.8	28.2	29.0	25.4
71°	21.1	22.2	24.6	27.4	26.6	27.4	25.4	26.6	27.0	27.8	24.2
71.5°	19.9	21.1	23.4	25.8	25.4	26.2	24.2	25.4	25.4	26.2	23.0
72°	19.1	20.3	22.2	25.0	24.2	25.0	23.4	24.2	24.2	25.0	21.9
72.5°	17.9	19.1	21.5	23.8	23.0	23.8	22.2	23.0	23.0	23.8	21.1
73°	17.1	18.3	20.3	22.6	21.9	22.6	21.1	21.9	21.9	22.6	19.9
73.5°	15.9	17.1	19.1	21.5	20.7	21.5	20.3	20.7	20.7	21.5	19.1
74°	15.1	16.3	18.3	20.3	19.9	20.7	19.1	19.5	19.9	20.7	18.3
74.5°	14.3	15.5	17.5	19.5	18.7	19.5	18.3	18.7	18.7	19.5	17.1
75°	13.5	14.3	16.3	18.3	17.5	18.7	17.1	17.5	17.5	18.3	16.3
75.5°	12.7	13.5	15.5	17.5	16.7	17.5	16.3	16.7	16.7	17.5	15.5
76°	11.5	12.7	14.7	16.7	15.9	16.7	15.5	15.5	15.5	16.3	14.7
76.5°	10.7	11.9	13.9	15.5	14.7	15.9	14.7	14.7	14.7	15.5	13.5
77°	10.3	11.1	13.1	14.7	13.9	14.7	13.9	13.5	13.5	14.3	12.7
77.5°	9.5	10.3	12.3	13.9	13.1	13.9	13.1	12.7	12.7	13.5	11.9
78°	8.7	9.5	11.5	13.1	12.3	13.1	12.3	11.9	11.9	12.7	11.1
78.5°	7.9	8.7	10.7	12.3	11.5	12.3	11.5	11.1	11.1	11.5	10.7
79°	7.5	7.9	9.9	11.5	10.7	11.5	10.7	10.3	10.3	10.7	9.9
79.5°	6.8	7.2	9.5	10.7	9.9	10.7	9.9	9.5	9.5	9.9	9.1
80°	6.0	6.8	8.7	9.9	9.1	9.9	9.5	8.7	8.7	9.1	8.3
80.5°	5.6	6.0	7.9	9.1	8.7	9.1	8.7	7.9	7.9	8.3	7.9
81°	4.8	5.2	7.5	8.3	7.9	8.3	7.9	7.2	7.2	7.5	7.2
81.5°	4.4	4.8	6.8	7.5	7.2	7.9	7.5	6.4	6.4	6.8	6.8
82°	4.0	4.0	6.4	7.2	6.8	7.2	6.8	6.0	6.0	6.0	6.0
82.5°	3.2	3.6	5.6	6.4	6.0	6.8	6.4	5.2	5.2	5.2	5.6
83°	2.8	3.2	5.2	6.0	5.6	6.0	5.6	4.8	4.4	4.8	4.8
83.5°	2.0	2.4	4.4	5.2	5.2	5.6	5.2	4.0	4.0	4.0	4.4
84°	1.6	2.0	4.0	4.8	4.4	4.8	4.8	3.6	3.2	3.6	4.0
84.5°	1.6	1.6	3.6	4.0	4.0	4.4	4.0	3.2	2.8	2.8	3.6
85°	1.2	1.6	3.2	3.6	3.6	4.0	3.6	2.4	2.0	2.4	3.2
85.5°	0.8	1.2	2.8	3.2	2.8	3.2	3.2	2.0	1.6	2.0	2.4
86°	0.8	0.8	2.0	2.4	2.4	2.8	2.8	1.6	1.6	1.6	2.0
86.5°	0.8	0.8	1.6	2.0	2.0	2.4	2.4	1.6	1.2	1.2	1.6
87°	0.4	0.4	1.2	1.6	1.6	1.6	2.0	1.2	1.2	1.2	1.2
87.5°	0.0	0.4	0.8	1.2	1.2	1.2	1.6	0.8	0.8	0.8	0.8
88°	0.0	0.0	0.4	0.8	0.8	0.8	1.2	0.8	0.8	0.8	0.4
88.5°	0.0	0.0	0.0	0.4	0.4	0.4	0.8	0.4	0.4	0.4	0.4



TEST NUMBER: P776317

CATALOG NUMBER: HCDJBL3040CSD-HCD4TSQH-4000lm-3500K

CANDELA DISTRIBUTION (continued):

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



TEST NUMBER: P776317

CATALOG NUMBER: HCDJBL3040CSD-HCD4TSQH-4000lm-3500K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
0°	3117.7	3117.7	3117.7	3117.7	3117.7	3117.7
0.5°	3117.0	3119.7	3118.1	3118.9	3118.1	3119.3
1°	3116.6	3119.3	3118.1	3118.9	3118.1	3119.3
1.5°	3115.4	3119.3	3118.1	3118.5	3118.1	3118.1
2°	3113.8	3118.1	3117.7	3117.7	3117.3	3117.3
2.5°	3111.8	3117.3	3116.2	3117.3	3115.8	3115.4
3°	3109.0	3115.4	3114.2	3115.0	3113.8	3113.0
3.5°	3105.8	3112.2	3111.8	3112.6	3111.0	3109.8
4°	3101.9	3108.6	3108.6	3109.4	3108.2	3106.2
4.5°	3097.5	3104.6	3105.0	3105.8	3104.2	3102.3
5°	3092.7	3100.3	3100.7	3101.5	3099.9	3097.5
5.5°	3087.2	3095.5	3095.9	3096.3	3094.7	3091.5
6°	3081.2	3089.5	3090.3	3091.1	3089.1	3086.0
6.5°	3074.4	3083.2	3084.4	3084.8	3082.8	3079.2
7°	3067.3	3076.4	3077.6	3078.4	3076.0	3071.7
7.5°	3059.3	3069.3	3070.9	3070.9	3068.5	3063.7
8°	3050.6	3060.5	3062.5	3063.3	3060.1	3055.4
8.5°	3041.9	3052.2	3054.2	3054.6	3051.4	3045.8
9°	3032.7	3042.3	3045.4	3045.8	3041.5	3035.9
9.5°	3022.4	3031.9	3035.1	3035.9	3032.3	3025.2
10°	3011.7	3022.0	3024.4	3026.0	3021.2	3013.3
10.5°	3000.1	3010.9	3013.6	3014.8	3010.1	3001.7
11°	2989.0	2998.6	3001.7	3002.9	2998.2	2989.4
11.5°	2976.7	2986.6	2989.4	2991.0	2985.8	2976.7
12°	2964.0	2973.1	2976.7	2978.3	2971.9	2962.8
12.5°	2949.7	2960.0	2963.2	2964.4	2958.8	2949.3
13°	2935.8	2946.1	2949.7	2951.3	2944.9	2935.0
13.5°	2921.9	2931.8	2935.4	2936.2	2929.8	2920.3
14°	2907.6	2917.1	2920.7	2920.3	2914.7	2904.8
14.5°	2896.4	2901.2	2905.2	2904.0	2898.8	2888.1
15°	2880.2	2884.5	2889.3	2887.7	2882.5	2871.8
15.5°	2863.1	2868.2	2871.4	2871.0	2865.4	2854.3
16°	2845.6	2850.7	2854.7	2854.3	2848.0	2836.8
16.5°	2827.7	2832.9	2837.2	2836.0	2830.5	2817.8
17°	2809.0	2813.8	2819.0	2817.4	2812.2	2799.1
17.5°	2790.0	2795.1	2799.9	2798.7	2792.7	2779.6
18°	2770.1	2774.9	2780.4	2779.2	2773.3	2759.4
18.5°	2749.8	2755.0	2760.6	2758.6	2752.2	2737.5
19°	2729.6	2734.3	2739.9	2738.7	2731.2	2716.9
19.5°	2707.7	2713.7	2718.4	2717.6	2710.1	2695.0
20°	2685.9	2692.2	2697.4	2696.6	2688.2	2673.1
20.5°	2663.6	2669.6	2675.1	2674.3	2665.6	2650.1
21°	2640.6	2646.9	2651.7	2652.1	2641.8	2626.7

TEST NUMBER: P776317

CATALOG NUMBER: HCDJBL3040CSD-HCD4TSQH-4000lm-3500K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
22.5°	2569.1	2575.4	2580.6	2581.8	2569.8	2555.1
23°	2544.8	2550.8	2555.5	2557.1	2544.8	2528.5
23.5°	2519.4	2525.3	2530.5	2531.7	2519.4	2503.9
24°	2492.8	2499.1	2504.7	2505.9	2494.0	2478.5
24.5°	2466.9	2474.1	2478.5	2479.3	2467.7	2455.4
25°	2440.7	2451.4	2451.0	2452.6	2440.7	2430.8
25.5°	2412.9	2420.5	2423.6	2425.2	2412.9	2398.6
26°	2384.7	2390.7	2397.8	2396.6	2386.7	2369.6
26.5°	2360.5	2360.5	2373.6	2368.8	2362.0	2338.2
27°	2333.4	2325.1	2341.0	2340.6	2337.0	2300.9
27.5°	2299.7	2290.1	2310.8	2311.2	2304.8	2261.9
28°	2269.9	2252.4	2279.4	2281.0	2272.7	2221.0
28.5°	2236.9	2212.7	2244.8	2252.0	2241.3	2178.1
29°	2202.7	2169.7	2209.9	2222.6	2205.9	2133.6
29.5°	2165.4	2126.4	2171.7	2192.4	2169.0	2084.7
30°	2127.6	2079.6	2132.4	2162.2	2129.6	2034.7
30.5°	2087.1	2029.9	2091.9	2131.6	2087.1	1981.8
31°	2045.4	1977.0	2047.4	2100.6	2043.8	1928.6
31.5°	2001.3	1927.0	2001.7	2069.2	1997.7	1874.5
32°	1956.4	1873.0	1954.8	2038.2	1950.8	1819.3
32.5°	1907.9	1818.1	1905.1	2010.4	1901.6	1766.1
33°	1857.9	1766.1	1853.1	1979.8	1849.9	1714.0
33.5°	1806.6	1713.6	1801.0	1947.3	1797.9	1662.4
34°	1755.7	1662.4	1749.0	1918.2	1745.8	1611.9
34.5°	1702.9	1609.9	1697.7	1884.1	1693.8	1561.1
35°	1652.0	1560.3	1645.7	1845.5	1641.7	1510.2
35.5°	1602.0	1510.6	1594.4	1807.8	1592.0	1460.5
36°	1552.3	1461.3	1545.6	1769.6	1543.2	1429.9
36.5°	1502.3	1432.7	1497.1	1727.1	1494.3	1374.3
37°	1454.2	1376.7	1448.6	1683.0	1446.6	1317.5
37.5°	1406.5	1319.1	1400.1	1637.3	1398.6	1260.7
38°	1359.2	1261.5	1351.7	1589.3	1350.9	1203.9
38.5°	1311.1	1203.9	1303.2	1540.4	1302.8	1153.0
39°	1263.1	1154.2	1254.7	1488.7	1254.7	1102.6
39.5°	1215.0	1103.3	1206.3	1437.9	1207.0	1053.3
40°	1166.5	1053.7	1156.6	1383.5	1157.0	1004.8
40.5°	1118.0	1005.6	1106.9	1328.6	1108.5	958.3
41°	1069.6	959.5	1058.8	1274.2	1061.2	911.8
41.5°	1022.7	911.8	1011.2	1219.8	1014.4	865.8
42°	977.0	866.9	965.5	1165.3	969.1	821.3
42.5°	931.7	822.8	919.8	1112.9	923.8	776.8
43°	887.6	776.4	876.1	1061.6	880.1	733.4
43.5°	844.3	731.9	832.4	1011.6	836.4	688.9



TEST NUMBER: P776317

CATALOG NUMBER: HCDJBL3040CSD-HCD4TSQH-4000lm-3500K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
45°	721.1	604.7	705.2	869.7	712.4	567.0
45.5°	681.4	565.0	663.9	825.6	672.3	528.8
46°	642.1	526.4	624.2	781.9	633.3	492.3
46.5°	602.7	489.5	583.7	737.8	594.4	456.5
47°	565.4	454.1	546.3	695.3	557.8	422.7
47.5°	528.8	419.6	509.4	653.6	521.3	391.4
48°	493.5	386.6	473.6	614.3	486.3	360.8
48.5°	459.7	356.0	439.8	574.1	451.7	332.2
49°	426.7	326.6	407.2	536.4	420.4	304.7
49.5°	396.1	299.2	375.1	499.8	389.0	278.1
50°	367.9	272.6	345.7	464.1	358.0	253.1
50.5°	339.7	247.1	317.5	430.7	329.4	230.0
51°	311.5	224.1	289.6	398.5	302.4	208.6
51.5°	283.7	203.0	264.6	367.5	276.5	188.7
52°	258.3	183.6	241.2	338.5	252.3	170.1
52.5°	234.8	164.9	218.1	310.7	228.9	153.0
53°	212.6	147.8	197.5	284.5	206.6	137.1
53.5°	191.5	134.7	177.6	260.2	186.3	124.0
54°	171.6	121.2	159.7	235.6	167.7	110.9
54.5°	154.2	107.7	143.4	214.2	150.6	97.7
55°	137.9	94.6	129.9	193.9	136.7	84.6
55.5°	123.2	81.1	116.8	174.4	123.2	75.9
56°	108.5	74.7	103.3	156.5	109.7	72.7
56.5°	95.4	71.5	90.2	139.9	96.2	69.9
57°	83.8	68.7	76.7	128.3	82.6	67.5
57.5°	73.9	66.0	69.1	117.2	72.7	64.8
58°	66.4	63.6	66.4	105.7	66.4	62.4
58.5°	63.6	61.2	64.0	94.2	63.6	60.0
59°	60.8	58.8	61.6	83.0	61.2	57.6
59.5°	58.8	56.8	59.2	75.5	58.8	55.6
60°	56.4	54.4	56.8	69.1	56.8	53.6
60.5°	54.4	52.4	54.8	63.6	54.4	51.3
61°	52.4	50.5	52.8	58.8	52.4	49.3
61.5°	50.5	48.5	50.9	54.4	50.5	47.7
62°	48.5	46.9	48.9	50.9	48.5	45.7
62.5°	46.5	44.9	46.9	47.7	46.9	43.7
63°	44.9	43.3	45.3	44.9	44.9	42.1
63.5°	43.3	41.7	43.3	42.9	42.9	40.5
64°	41.3	40.1	41.7	41.3	41.3	38.9
64.5°	40.1	38.5	40.1	39.7	39.7	37.3
65°	38.5	37.0	38.5	38.1	38.1	35.8
65.5°	37.0	35.4	37.3	36.6	36.6	34.6
66°	35.4	34.2	35.8	35.4	35.4	33.0



TEST NUMBER: P776317

CATALOG NUMBER: HCDJBL3040CSD-HCD4TSQH-4000lm-3500K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
67.5°	31.8	30.2	31.8	31.4	31.0	29.0
68°	30.2	29.0	30.2	29.8	29.8	27.8
68.5°	29.0	27.8	29.0	28.6	28.6	26.6
69°	27.8	26.6	27.8	27.4	27.4	25.4
69.5°	26.6	25.4	26.6	26.2	26.2	24.2
70°	25.4	24.2	25.8	25.0	25.0	23.0
70.5°	24.6	23.4	24.6	24.2	23.8	21.9
71°	23.4	22.2	23.4	23.0	22.6	21.1
71.5°	22.2	21.5	22.2	21.9	21.5	19.9
72°	21.5	20.3	21.5	21.1	20.7	19.1
72.5°	20.7	19.5	20.3	19.9	19.5	17.9
73°	19.5	18.3	19.5	19.1	18.3	17.1
73.5°	18.7	17.5	18.7	18.3	17.5	15.9
74°	17.9	16.7	17.5	17.1	16.7	15.1
74.5°	17.1	15.9	16.7	16.3	15.5	14.3
75°	15.9	15.1	15.9	15.5	14.7	13.5
75.5°	15.1	14.3	15.1	14.7	13.9	12.7
76°	14.3	13.5	14.3	13.9	13.1	11.5
76.5°	13.5	12.7	13.5	13.1	12.3	10.7
77°	12.7	11.9	12.7	11.9	11.5	10.3
77.5°	11.9	11.1	11.9	11.5	10.3	9.5
78°	11.1	10.3	11.1	10.7	9.5	8.7
78.5°	10.7	9.9	10.3	9.9	9.1	7.9
79°	9.9	9.1	9.5	9.1	8.3	7.5
79.5°	9.1	8.3	9.1	8.3	7.5	6.8
80°	8.3	7.9	8.3	7.9	6.8	6.0
80.5°	7.9	7.5	7.9	7.2	6.0	5.6
81°	7.2	6.8	7.2	6.8	5.6	4.8
81.5°	6.8	6.4	6.4	6.0	4.8	4.4
82°	6.0	5.6	6.0	5.6	4.0	4.0
82.5°	5.6	5.2	5.6	4.8	3.6	3.2
83°	5.2	4.8	4.8	4.4	3.2	2.8
83.5°	4.4	4.4	4.4	4.0	2.8	2.0
84°	4.0	4.0	4.0	3.6	2.0	1.6
84.5°	3.6	3.6	3.2	3.2	1.6	1.6
85°	3.2	2.8	2.8	2.4	1.6	1.2
85.5°	2.4	2.4	2.4	2.0	1.2	0.8
86°	2.0	2.0	2.0	1.6	0.8	0.8
86.5°	1.6	1.6	1.6	1.2	0.8	0.8
87°	1.2	1.2	1.2	0.8	0.4	0.4
87.5°	0.8	0.8	0.8	0.4	0.4	0.0
88°	0.4	0.4	0.4	0.4	0.0	0.0
88.5°	0.0	0.0	0.0	0.0	0.0	0.0



TEST NUMBER: P776317

CATALOG NUMBER: HCDJBL3040CSD-HCD4TSQH-4000lm-3500K

CANDELA DISTRIBUTION (continued):

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



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Cooper Lighting Solutions Photometric Lab
1121 Highway 74 South
Peachtree City, GA 30269

Scaled Data Report





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

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1121 Highway 74 South
Peachtree City, GA 30269

Scaled Data Report



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Peachtree City, GA 30269

Scaled Data Report





21.5°	2603.2	2594.1	2612.8	2595.7	2575.4	2577.0	2594.5	2594.1	2599.6	2622.7	2617.1
22°	2579.4	2570.2	2589.3	2570.6	2550.8	2552.4	2570.2	2569.1	2575.0	2598.1	2594.5



44°	646.8	743.4	936.5	776.8	628.6	743.8	923.4	804.6	679.8	796.6	931.3
44.5°	606.3	702.5	889.2	733.8	589.6	703.6	878.5	762.5	640.1	754.1	883.2



66.5°	31.8	33.4	36.2	40.5	39.7	40.5	37.7	39.7	40.5	41.3	35.4
67°	30.2	31.8	34.6	38.5	38.1	38.9	36.2	38.1	38.5	39.7	34.2



89°	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.0	0.0	0.0	0.0
89.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

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Scaled Data Report





21.5°	2616.7	2623.1	2628.6	2629.0	2618.3	2603.2
22°	2593.3	2599.6	2604.8	2605.6	2594.5	2579.4



44°	802.6	689.3	789.1	963.1	794.6	646.8
44.5°	762.1	646.4	747.0	915.4	752.9	606.3



66.5°	34.2	32.6	34.2	33.8	33.8	31.8
67°	33.0	31.4	33.0	32.6	32.2	30.2



89°	0.0	0.0	0.0	0.0	0.0	0.0
89.5°	0.0	0.0	0.0	0.0	0.0	0.0

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Peachtree City, GA 30269

Scaled Data Report



(END OF REPORT)