

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: P776490

Luminaire Tested: HCDJBL3040CSD-HCD8TRH-4000lm-2700K

Issue Date: 2/7/2024

Test Information

Test Method: LM-79-2019
Report Number: P776490
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-HCD8TRH-4000lm-2700K
Description: 8 INCH ROUND MEDIUM HAZE TRIM
Light Source: SELECTABLE LUMENS AND CCT ARRAY 90CRI / 2700K CCT
Ballast/Driver: -

Summary

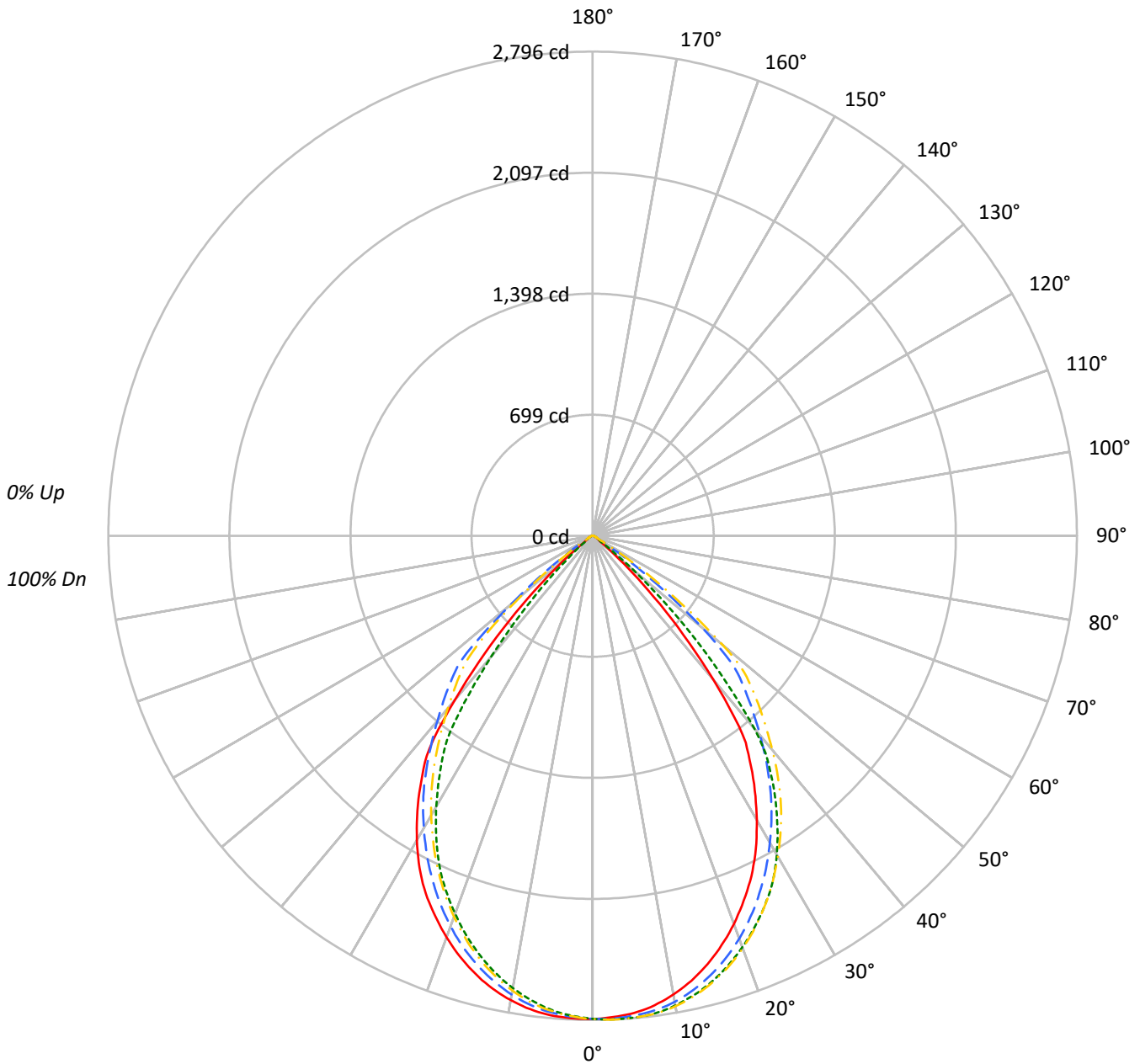
Lumens per Lamp: N/A
Luminaire Lumens: 3867.0 lumens
Efficiency: N/A
Efficacy: 100.4 lumens/watt
Spacing Criteria (0/90/45): 1.08 / 1.08 / 1.15
Luminous Opening: Circular (Dia: 0.67' x H: 0')
CIE Type: Direct

Input Watts (W): 38.5
Input Voltage (V): NR
Input Current (A_{in}): 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	100	100
1	113	110	107	104	110	107	105	103	103	101	99	100	98	97	96	95	94	92	92	92	92
2	106	101	96	92	104	99	95	91	96	92	89	92	90	87	90	87	85	84	84	84	84
3	100	92	87	82	98	91	86	81	88	84	80	86	82	79	83	80	78	76	76	76	76
4	94	85	79	74	92	84	78	73	82	76	72	79	75	72	78	74	71	69	69	69	69
5	88	78	72	67	86	77	71	66	75	70	66	74	69	65	72	68	65	63	63	63	63
6	83	72	66	61	81	72	65	60	70	64	60	68	63	60	67	63	59	57	57	57	57
7	78	67	60	55	76	66	60	55	65	59	55	64	58	55	62	58	54	53	53	53	53
8	73	62	55	51	72	62	55	51	60	55	50	59	54	50	58	54	50	48	48	48	48
9	69	58	51	47	68	57	51	47	56	51	46	56	50	46	55	50	46	45	45	45	45
10	65	54	48	43	64	54	47	43	53	47	43	52	47	43	51	46	43	41	41	41	41

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°	270°
0°	85179	85179	85179	85179
5°	84751	85597	85174	84199
10°	83375	85374	84410	82222
15°	80953	84205	82748	79315
20°	77491	82140	80136	75434
25°	73056	79271	76765	70560
30°	66833	74977	71529	63625
35°	58929	68410	64277	55354
40°	43162	57797	49248	36064
45°	21739	35193	27192	15906
50°	6635	14600	8929	4555
55°	2454	2757	2454	2124
60°	1875	2064	1875	1618
65°	1466	1582	1445	1250
70°	1160	1268	1134	991
75°	955	1038	908	767
80°	738	879	738	615
85°	525	806	525	420

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 135°
 Vertical Angle: 45°
 Luminance: 57843 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	262.6	6.8
10°-20°	728.9	18.9
20°-30°	1022.9	26.5
30°-40°	1050.5	27.2
40°-50°	642.3	16.6
50°-60°	124.7	3.2
60°-70°	22.7	0.6
70°-80°	10.1	0.3
80°-90°	2.2	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°	2014.5	52.1
0°-40°	3064.9	79.3
0°-60°	3831.9	99.1
0°-90°	3867.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3867.0	100.0

CANDELA DISTRIBUTION:

	0°	90°	180°	270°	360°	Flux
0°	2790	2790	2790	2790	2790	
5°	2765	2793	2779	2747	2765	262
15°	2561	2664	2618	2509	2561	719
25°	2169	2353	2279	2095	2169	992
35°	1581	1836	1725	1485	1581	966
45°	504	815	630	368	504	406
55°	46	52	46	40	46	50
65°	20	22	20	17	20	21
75°	8	9	8	6	8	9
85°	2	2	2	1	2	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°	2790.0	2790.0	2790.0	2790.0	2790.0	2790.0	2790.0	2790.0	2790.0	2790.0	2790.0
0.5°	2789.2	2788.8	2790.7	2792.3	2791.1	2792.3	2793.0	2793.0	2790.3	2788.4	2788.4
1°	2787.7	2788.4	2790.7	2793.4	2792.7	2793.8	2794.6	2793.8	2790.3	2787.3	2786.9
1.5°	2786.1	2787.7	2790.7	2794.2	2793.8	2795.3	2795.7	2794.2	2790.0	2786.1	2785.0
2°	2784.2	2786.5	2790.7	2794.6	2795.0	2796.1	2796.5	2794.2	2789.2	2784.6	2782.7
2.5°	2781.9	2785.0	2790.0	2794.6	2795.3	2796.9	2796.5	2794.2	2788.4	2782.7	2780.4
3°	2779.2	2783.1	2788.8	2793.8	2795.3	2796.9	2796.5	2793.8	2786.9	2780.8	2777.3
3.5°	2776.1	2780.8	2787.3	2792.7	2795.3	2796.9	2796.1	2792.7	2785.4	2778.1	2774.2
4°	2773.1	2778.5	2785.4	2791.5	2794.6	2796.1	2795.3	2791.9	2783.8	2775.8	2770.8
4.5°	2769.6	2775.8	2783.1	2790.0	2793.8	2795.3	2794.2	2790.7	2781.9	2773.1	2766.6
5°	2765.4	2772.7	2780.8	2788.4	2793.0	2794.2	2793.0	2788.8	2779.2	2769.6	2762.7
5.5°	2760.8	2768.9	2777.7	2786.5	2791.5	2793.0	2791.5	2786.5	2776.5	2766.2	2758.1
6°	2755.4	2764.6	2775.0	2784.2	2790.0	2791.5	2789.6	2784.2	2772.7	2761.9	2752.7
6.5°	2749.3	2759.3	2771.5	2781.5	2787.7	2789.6	2787.7	2780.8	2768.1	2757.0	2747.0
7°	2742.4	2753.9	2767.7	2778.1	2784.6	2786.9	2785.4	2776.9	2763.1	2751.6	2740.8
7.5°	2735.1	2747.4	2763.5	2773.8	2780.8	2783.8	2782.3	2771.9	2757.7	2745.1	2733.9
8°	2726.6	2740.5	2758.9	2769.2	2776.5	2780.0	2778.8	2767.3	2752.0	2738.9	2726.3
8.5°	2717.8	2732.4	2753.1	2764.3	2771.5	2775.4	2774.6	2761.9	2745.1	2731.6	2718.2
9°	2709.0	2724.7	2747.0	2758.5	2766.2	2770.8	2770.0	2755.8	2738.2	2723.6	2709.4
9.5°	2699.0	2715.9	2740.1	2752.4	2760.4	2765.0	2764.6	2749.3	2730.5	2715.5	2700.2
10°	2689.4	2707.5	2732.4	2745.8	2753.9	2759.3	2758.5	2742.4	2722.8	2707.1	2690.2
10.5°	2679.1	2697.9	2724.3	2738.5	2746.6	2753.1	2752.4	2735.5	2714.7	2697.9	2679.8
11°	2667.9	2688.3	2715.5	2730.9	2739.3	2745.8	2745.4	2727.8	2705.9	2688.7	2669.5
11.5°	2656.4	2677.9	2706.3	2722.4	2731.6	2738.2	2737.8	2719.7	2696.7	2678.3	2657.9
12°	2644.1	2667.5	2696.3	2714.0	2723.6	2730.5	2729.3	2711.3	2687.1	2667.9	2646.4
12.5°	2631.9	2656.4	2686.3	2704.8	2714.7	2722.4	2720.5	2702.5	2676.8	2656.8	2634.2
13°	2618.8	2644.9	2675.6	2695.6	2705.9	2714.0	2711.7	2692.9	2666.4	2645.3	2621.9
13.5°	2605.0	2633.0	2664.1	2685.6	2695.9	2704.8	2702.1	2683.3	2654.9	2633.4	2609.2
14°	2590.8	2620.3	2652.6	2675.2	2686.0	2695.2	2691.7	2672.9	2643.4	2621.1	2595.4
14.5°	2575.8	2606.5	2640.3	2664.1	2675.2	2684.8	2681.4	2661.8	2630.7	2607.7	2582.0
15°	2561.2	2593.1	2627.6	2652.2	2664.1	2674.1	2670.2	2650.7	2618.0	2594.2	2567.8
15.5°	2545.1	2578.9	2614.6	2639.9	2652.6	2662.6	2658.7	2638.8	2605.0	2580.4	2553.2
16°	2529.0	2563.9	2601.2	2627.6	2640.7	2651.0	2646.8	2626.1	2591.2	2565.8	2537.8
16.5°	2512.9	2549.0	2587.0	2615.0	2628.0	2639.1	2634.9	2612.7	2577.0	2550.9	2522.1
17°	2496.0	2533.6	2572.4	2601.5	2615.0	2626.5	2621.9	2600.0	2562.8	2535.1	2505.6
17.5°	2478.3	2517.5	2557.0	2587.0	2601.5	2613.0	2608.4	2585.8	2547.4	2519.4	2489.1
18°	2460.7	2500.6	2541.7	2572.4	2587.7	2599.6	2595.0	2571.2	2532.1	2503.3	2472.2
18.5°	2442.3	2483.3	2525.6	2557.4	2573.1	2585.4	2580.4	2556.6	2516.0	2486.4	2454.2
19°	2423.5	2466.1	2509.0	2542.1	2558.6	2570.5	2565.5	2541.3	2499.8	2469.5	2436.5
19.5°	2404.7	2448.0	2492.2	2525.9	2543.6	2555.5	2550.5	2525.6	2483.3	2451.9	2418.1
20°	2385.1	2429.6	2474.9	2510.2	2528.2	2539.7	2534.8	2509.4	2466.5	2434.2	2399.3
20.5°	2364.8	2410.0	2457.2	2493.3	2512.5	2524.4	2518.6	2492.5	2448.8	2415.4	2380.1
21°	2344.0	2390.5	2439.2	2476.4	2496.0	2507.9	2502.1	2475.7	2431.5	2397.0	2360.5



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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°	2280.3	2329.4	2382.0	2423.1	2445.7	2457.2	2449.9	2423.1	2375.5	2339.0	2299.1
23°	2258.5	2307.6	2362.5	2404.7	2427.7	2439.2	2431.9	2404.7	2356.7	2319.1	2278.0
23.5°	2236.6	2286.5	2342.5	2385.9	2409.3	2421.6	2413.1	2385.5	2337.9	2298.4	2256.5
24°	2214.3	2264.2	2321.4	2366.7	2391.2	2402.7	2393.9	2366.3	2318.7	2277.6	2235.0
24.5°	2191.7	2242.3	2300.3	2347.1	2372.4	2383.6	2374.3	2347.1	2299.1	2256.5	2212.8
25°	2168.7	2219.7	2278.8	2326.8	2353.2	2364.0	2355.2	2327.1	2278.8	2235.0	2189.8
25.5°	2144.1	2197.0	2257.3	2306.8	2334.4	2344.8	2334.8	2307.2	2257.7	2213.6	2167.1
26°	2118.8	2174.4	2235.4	2286.1	2315.2	2324.8	2314.5	2287.2	2235.4	2192.1	2144.1
26.5°	2093.0	2151.4	2212.8	2265.7	2294.9	2304.1	2293.4	2266.9	2212.0	2169.4	2120.7
27°	2066.6	2127.2	2190.1	2244.6	2273.4	2283.4	2272.7	2245.8	2187.8	2146.4	2096.9
27.5°	2039.3	2101.9	2166.7	2222.8	2251.2	2263.1	2251.2	2223.9	2162.9	2122.6	2072.3
28°	2011.7	2075.8	2143.3	2200.5	2227.7	2241.9	2229.3	2200.5	2137.6	2096.9	2048.1
28.5°	1983.7	2049.7	2119.9	2178.2	2203.6	2219.7	2207.0	2176.7	2111.5	2071.6	2024.0
29°	1954.1	2022.4	2095.4	2154.8	2179.0	2196.7	2185.2	2152.5	2085.0	2045.8	1999.4
29.5°	1925.3	1996.0	2071.6	2130.7	2153.3	2172.9	2162.1	2127.6	2057.0	2019.4	1974.5
30°	1895.8	1967.9	2047.0	2104.9	2126.8	2148.7	2139.1	2101.1	2029.0	1992.1	1948.8
30.5°	1865.5	1939.9	2022.8	2079.2	2099.6	2123.0	2115.7	2074.6	2000.6	1964.5	1923.8
31°	1835.2	1910.8	1997.5	2052.8	2071.9	2098.0	2092.7	2047.8	1971.8	1936.5	1898.5
31.5°	1804.5	1882.7	1972.9	2025.9	2043.5	2071.2	2068.5	2020.5	1942.6	1908.1	1872.8
32°	1774.1	1852.8	1947.2	1998.3	2015.1	2044.3	2044.7	1992.9	1912.7	1879.7	1846.7
32.5°	1743.1	1824.4	1921.9	1969.5	1986.4	2016.7	2020.5	1964.5	1883.1	1851.7	1820.6
33°	1711.2	1794.9	1896.2	1941.5	1956.8	1989.4	1996.3	1935.3	1852.4	1822.1	1793.7
33.5°	1679.4	1764.9	1870.5	1911.5	1926.5	1960.7	1971.8	1906.2	1821.3	1793.3	1766.1
34°	1647.5	1734.6	1842.5	1883.5	1896.9	1932.3	1946.8	1877.0	1789.9	1764.5	1738.5
34.5°	1614.5	1705.1	1816.4	1853.6	1866.2	1903.9	1921.5	1847.4	1756.9	1735.0	1709.3
35°	1581.1	1674.0	1788.7	1824.0	1835.5	1875.1	1895.8	1817.5	1724.6	1704.7	1680.9
35.5°	1549.6	1643.3	1761.9	1793.7	1803.3	1845.5	1869.3	1787.2	1692.4	1674.7	1651.7
36°	1515.9	1612.6	1733.5	1765.3	1771.5	1816.7	1842.1	1756.5	1660.5	1644.4	1622.9
36.5°	1486.3	1581.1	1705.4	1735.0	1739.2	1787.2	1814.4	1725.4	1626.8	1613.7	1594.2
37°	1438.0	1549.6	1676.7	1704.7	1706.2	1756.1	1786.4	1694.3	1589.9	1582.6	1564.2
37.5°	1389.2	1518.2	1648.7	1673.6	1673.6	1726.2	1758.0	1662.1	1543.9	1551.9	1535.1
38°	1325.5	1486.7	1619.5	1642.9	1638.7	1695.1	1729.6	1630.6	1491.7	1520.9	1506.3
38.5°	1266.8	1455.6	1591.1	1611.0	1603.4	1664.0	1700.8	1599.5	1432.6	1489.4	1478.3
39°	1207.3	1423.8	1561.5	1581.1	1556.9	1633.3	1671.7	1567.3	1368.9	1454.1	1449.1
39.5°	1147.1	1373.9	1533.1	1549.3	1508.2	1601.4	1642.5	1536.2	1301.3	1411.1	1420.7
40°	1083.0	1317.8	1504.4	1518.2	1450.2	1570.4	1613.3	1490.9	1235.7	1362.0	1393.1
40.5°	1020.0	1259.1	1476.0	1487.1	1385.8	1538.9	1584.6	1444.1	1172.8	1305.9	1366.6
41°	956.0	1201.6	1447.6	1444.9	1320.1	1495.1	1555.0	1390.4	1109.5	1247.2	1340.1
41.5°	893.4	1144.4	1419.9	1404.6	1254.1	1454.1	1527.4	1331.7	1048.8	1186.6	1314.4
42°	833.9	1086.1	1392.7	1353.9	1188.9	1401.1	1499.0	1271.4	985.1	1125.6	1287.9
42.5°	778.3	1025.0	1365.8	1299.8	1125.2	1344.7	1471.7	1207.3	924.1	1067.2	1262.6
43°	722.6	963.6	1339.3	1241.9	1063.8	1284.1	1445.3	1148.2	860.4	1009.7	1236.1
43.5°	665.8	903.0	1312.1	1181.2	1001.6	1221.5	1418.4	1088.7	800.1	952.9	1210.4



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
45°	503.5	733.8	1233.8	1004.3	815.1	1040.0	1339.7	913.0	629.8	781.0	1132.9
45.5°	454.4	678.9	1207.7	948.7	756.0	981.3	1313.2	853.5	575.3	725.3	1106.8
46°	407.6	625.2	1181.2	892.6	699.2	923.0	1286.0	795.5	522.7	670.8	1081.8
46.5°	360.7	572.2	1155.5	835.8	643.2	863.5	1260.3	738.7	471.3	619.8	1040.4
47°	317.4	519.2	1124.4	778.7	588.3	803.2	1233.4	683.1	421.8	567.6	991.3
47.5°	277.5	470.5	1084.9	723.0	534.2	746.4	1205.8	629.8	379.5	518.1	933.7
48°	241.0	423.3	1038.5	669.3	483.2	691.2	1178.2	577.9	337.7	469.0	870.0
48.5°	209.5	378.0	987.8	617.5	433.7	637.0	1140.2	526.5	295.9	422.9	806.7
49°	182.3	334.6	939.5	567.6	391.4	583.7	1091.4	475.9	254.1	381.1	741.8
49.5°	159.3	293.6	882.7	517.7	349.6	531.9	1040.8	427.9	219.1	339.2	678.9
50°	139.7	254.8	827.4	468.6	307.4	480.5	980.9	386.8	188.0	297.0	617.1
50.5°	124.3	219.5	766.0	421.0	265.6	432.9	916.8	345.8	159.6	255.6	559.5
51°	108.6	189.6	701.9	375.7	224.1	390.7	850.4	305.1	134.7	221.4	502.7
51.5°	93.3	163.9	639.7	332.7	192.3	348.5	783.6	264.0	112.8	190.0	450.5
52°	77.9	142.4	579.5	293.2	161.9	306.2	718.8	223.4	92.1	160.8	406.8
52.5°	62.6	126.3	520.8	255.2	134.7	264.0	656.6	190.7	73.7	134.3	363.4
53°	54.5	110.5	467.8	219.9	111.3	222.2	597.5	161.2	59.1	111.3	320.1
53.5°	51.8	94.4	416.0	186.9	90.6	188.8	539.6	135.5	52.6	91.0	276.3
54°	49.9	78.7	367.6	157.7	71.0	158.1	485.1	112.4	50.3	72.5	232.9
54.5°	48.0	62.9	321.6	130.1	56.8	132.0	432.1	92.1	48.4	56.0	199.2
55°	46.1	51.4	280.9	110.1	51.8	107.8	386.1	73.3	46.1	44.9	170.0
55.5°	44.1	46.4	241.8	90.6	49.9	86.3	340.8	56.4	44.1	43.0	143.9
56°	42.2	44.5	206.8	70.6	47.6	67.2	295.1	45.7	42.6	41.4	121.3
56.5°	40.7	42.6	175.8	51.0	45.3	51.4	249.4	43.7	40.7	39.9	101.3
57°	39.1	41.1	148.1	43.7	43.4	44.1	213.4	41.8	39.1	38.4	84.8
57.5°	37.6	39.5	125.9	42.2	41.8	42.2	180.4	40.3	37.6	36.8	71.4
58°	36.1	38.0	109.8	40.7	39.9	40.7	150.4	38.8	36.1	35.7	60.6
58.5°	34.5	36.8	93.6	39.1	38.4	39.1	124.3	37.6	34.5	34.2	52.2
59°	33.0	35.3	77.5	37.6	36.8	37.6	101.3	36.1	33.0	33.0	45.3
59.5°	31.9	34.2	61.4	36.5	35.3	36.1	82.1	34.9	31.9	31.9	40.3
60°	30.7	33.0	53.3	34.9	33.8	34.9	67.5	33.8	30.7	30.7	36.5
60.5°	29.5	31.9	46.4	33.8	32.2	33.8	56.4	32.2	29.2	29.9	33.0
61°	28.4	30.7	41.1	32.6	31.1	32.2	48.0	31.5	28.0	28.8	31.1
61.5°	27.2	29.5	36.5	31.5	29.9	31.1	41.8	30.3	26.9	27.6	29.9
62°	26.1	28.4	33.4	30.3	28.8	30.3	37.2	29.2	25.7	26.9	28.8
62.5°	24.9	27.6	31.1	29.2	27.6	29.2	33.8	28.0	24.6	25.7	27.6
63°	23.8	26.5	29.9	28.4	26.1	28.0	31.1	27.2	23.4	24.9	26.5
63.5°	23.0	25.7	29.2	27.2	24.9	26.9	29.9	26.1	22.6	23.8	25.7
64°	21.9	24.6	28.0	26.1	24.2	26.1	28.8	25.3	21.5	23.0	24.6
64.5°	21.1	23.8	27.2	25.3	23.0	24.9	27.6	24.2	20.7	22.3	23.8
65°	20.3	23.0	26.1	24.6	21.9	24.2	26.5	23.4	20.0	21.5	23.0
65.5°	19.6	22.3	25.3	23.4	21.1	23.4	25.3	22.6	18.8	20.7	22.3
66°	18.4	21.1	24.2	22.6	20.3	22.3	24.6	21.5	18.0	20.0	21.5



TEST NUMBER: P776490

CATALOG NUMBER: HCDJBL3040CSD-HCD8TRH-4000lm-2700K

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
67.5°	16.5	18.8	21.9	20.3	17.7	20.0	22.3	19.2	15.7	17.7	19.2
68°	15.7	18.0	21.1	19.6	16.9	19.2	21.1	18.4	15.4	16.9	18.4
68.5°	15.0	17.7	20.3	18.8	16.1	18.4	20.3	17.7	14.6	16.1	17.7
69°	14.2	16.9	19.6	18.0	15.4	17.7	19.6	17.3	13.8	15.7	16.9
69.5°	13.8	16.1	18.8	17.3	15.0	17.3	18.8	16.5	13.4	15.0	16.1
70°	13.0	15.4	18.0	16.5	14.2	16.5	18.0	15.7	12.7	14.2	15.4
70.5°	12.7	15.0	17.3	16.1	13.4	15.7	17.7	15.0	12.3	13.8	15.0
71°	11.9	14.2	16.5	15.4	13.0	15.4	16.9	14.6	11.5	13.0	14.2
71.5°	11.5	13.8	15.7	14.6	12.3	14.6	16.1	13.8	11.1	12.7	13.4
72°	10.7	13.0	15.4	14.2	11.9	13.8	15.4	13.4	10.4	11.9	13.0
72.5°	10.4	12.7	14.6	13.4	11.1	13.4	14.6	12.7	10.0	11.5	12.3
73°	10.0	11.9	13.8	13.0	10.7	12.7	14.2	12.3	9.6	11.1	11.9
73.5°	9.2	11.5	13.4	12.3	10.4	12.3	13.4	11.5	9.2	10.4	11.1
74°	8.8	10.7	12.7	11.9	10.0	11.9	13.0	11.1	8.4	10.0	10.7
74.5°	8.4	10.4	11.9	11.1	9.2	11.1	12.3	10.7	8.1	9.6	10.0
75°	8.1	10.0	11.5	10.7	8.8	10.7	11.9	10.0	7.7	8.8	9.6
75.5°	7.7	9.2	10.7	10.4	8.4	10.4	11.1	9.6	7.3	8.4	9.2
76°	7.3	8.8	10.4	10.0	8.1	10.0	10.7	9.2	6.9	8.1	8.4
76.5°	6.9	8.4	10.0	9.2	7.7	9.2	10.0	8.4	6.5	7.7	8.1
77°	6.5	8.1	9.2	8.8	7.3	8.8	9.6	8.1	6.1	7.3	7.7
77.5°	6.1	7.7	8.8	8.4	6.9	8.4	9.2	7.7	5.8	6.9	7.3
78°	5.8	7.3	8.4	8.1	6.5	8.1	8.4	7.3	5.4	6.5	6.5
78.5°	5.4	6.5	7.7	7.7	6.1	7.7	8.1	6.9	5.0	5.8	6.1
79°	5.0	6.1	7.3	6.9	5.8	7.3	7.7	6.5	5.0	5.4	5.8
79.5°	4.6	5.8	6.9	6.5	5.4	6.9	7.3	6.1	4.6	5.0	5.4
80°	4.2	5.4	6.5	6.1	5.0	6.1	6.5	5.8	4.2	4.6	5.0
80.5°	3.8	5.0	6.1	5.8	5.0	5.8	6.1	5.0	3.8	4.2	4.6
81°	3.5	4.6	5.8	5.4	4.6	5.4	5.8	4.6	3.5	3.8	4.2
81.5°	3.5	4.2	5.0	5.0	4.2	5.4	5.4	4.6	3.5	3.8	3.8
82°	3.1	3.8	4.6	4.6	3.8	5.0	5.0	4.2	3.1	3.5	3.5
82.5°	2.7	3.5	4.2	4.2	3.5	4.6	4.6	3.8	2.7	3.1	3.1
83°	2.3	3.1	3.8	3.8	3.5	4.2	4.2	3.5	2.3	2.7	2.7
83.5°	2.3	2.7	3.5	3.5	3.1	3.8	3.8	3.1	2.3	2.3	2.3
84°	1.9	2.7	3.1	3.5	2.7	3.5	3.5	2.7	1.9	1.9	1.9
84.5°	1.5	2.3	2.7	3.1	2.7	3.1	3.1	2.3	1.5	1.5	1.9
85°	1.5	1.9	2.3	2.7	2.3	2.7	2.7	1.9	1.5	1.5	1.5
85.5°	1.2	1.5	2.3	2.3	2.3	2.7	2.3	1.5	1.2	1.2	1.2
86°	0.8	1.2	1.9	1.9	1.9	2.3	1.9	1.5	1.2	0.8	0.8
86.5°	0.8	0.8	1.5	1.9	1.5	1.9	1.9	1.2	0.8	0.8	0.8
87°	0.4	0.8	1.2	1.5	1.5	1.5	1.5	0.8	0.8	0.4	0.4
87.5°	0.4	0.4	1.2	1.2	1.2	1.5	1.2	0.8	0.4	0.4	0.4
88°	0.4	0.4	0.8	1.2	1.2	1.2	1.2	0.4	0.4	0.0	0.0
88.5°	0.0	0.4	0.4	0.8	0.8	0.8	0.8	0.4	0.4	0.0	0.0



TEST NUMBER: P776490
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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	0.4	0.0	0.4	0.0	0.0	0.0	0.0



TEST NUMBER: P776490

CATALOG NUMBER: HCDJBL3040CSD-HCD8TRH-4000lm-2700K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
0°	2790.0	2790.0	2790.0	2790.0	2790.0	2790.0
0.5°	2789.2	2786.5	2787.7	2789.2	2790.0	2789.2
1°	2786.9	2783.8	2785.0	2786.5	2788.0	2787.7
1.5°	2784.2	2780.8	2781.9	2783.8	2785.4	2786.1
2°	2781.5	2777.7	2778.5	2780.8	2782.7	2784.2
2.5°	2778.5	2774.2	2775.0	2777.3	2779.6	2781.9
3°	2775.4	2770.0	2771.2	2773.1	2776.5	2779.2
3.5°	2771.2	2765.4	2766.2	2769.2	2772.7	2776.1
4°	2766.9	2760.0	2761.2	2764.6	2769.2	2773.1
4.5°	2761.9	2753.9	2755.0	2759.3	2765.0	2769.6
5°	2756.2	2747.4	2748.5	2753.9	2760.0	2765.4
5.5°	2750.1	2739.7	2741.2	2748.1	2755.0	2760.8
6°	2743.1	2732.4	2733.9	2741.6	2749.3	2755.4
6.5°	2735.9	2723.6	2725.5	2734.3	2743.1	2749.3
7°	2728.2	2714.7	2716.7	2726.6	2735.9	2742.4
7.5°	2719.4	2705.2	2707.1	2718.2	2728.2	2735.1
8°	2710.5	2695.6	2697.5	2709.4	2719.7	2726.6
8.5°	2701.3	2685.2	2687.5	2699.8	2710.1	2717.8
9°	2691.7	2674.5	2677.1	2689.4	2700.5	2709.0
9.5°	2681.7	2663.3	2666.0	2678.7	2690.2	2699.0
10°	2671.8	2652.2	2654.9	2667.2	2679.8	2689.4
10.5°	2660.6	2639.9	2643.0	2655.3	2668.7	2679.1
11°	2649.5	2627.2	2630.7	2642.6	2657.2	2667.9
11.5°	2638.0	2614.6	2618.0	2629.9	2644.9	2656.4
12°	2625.7	2600.8	2604.6	2616.5	2632.2	2644.1
12.5°	2612.7	2586.6	2590.8	2602.3	2618.8	2631.9
13°	2599.6	2572.0	2576.6	2588.1	2605.4	2618.8
13.5°	2585.4	2556.6	2561.6	2573.9	2591.2	2605.0
14°	2571.2	2541.3	2545.9	2558.6	2576.6	2590.8
14.5°	2556.6	2525.9	2530.2	2542.8	2560.9	2575.8
15°	2541.3	2509.4	2513.7	2527.1	2545.5	2561.2
15.5°	2525.9	2492.2	2497.2	2510.2	2529.0	2545.1
16°	2509.8	2475.3	2479.9	2493.3	2512.1	2529.0
16.5°	2493.3	2458.0	2462.6	2476.0	2495.2	2512.9
17°	2476.0	2440.0	2444.2	2457.6	2478.0	2496.0
17.5°	2458.8	2421.6	2425.8	2439.2	2459.5	2478.3
18°	2440.7	2402.0	2406.6	2420.0	2441.5	2460.7
18.5°	2422.3	2382.8	2387.4	2400.8	2422.3	2442.3
19°	2403.9	2362.8	2367.4	2381.3	2403.1	2423.5
19.5°	2384.3	2342.5	2346.7	2361.3	2383.6	2404.7
20°	2365.1	2321.8	2326.4	2340.6	2363.6	2385.1
20.5°	2344.8	2301.0	2304.9	2319.9	2343.3	2364.8
21°	2324.1	2279.9	2283.4	2298.7	2321.8	2344.0



TEST NUMBER: P776490

CATALOG NUMBER: HCDJBL3040CSD-HCD8TRH-4000lm-2700K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
22.5°	2260.8	2215.1	2217.0	2232.7	2256.9	2280.3
23°	2239.3	2192.4	2194.0	2210.5	2233.9	2258.5
23.5°	2217.4	2169.8	2172.1	2187.8	2211.2	2236.6
24°	2195.5	2145.6	2148.3	2164.4	2188.6	2214.3
24.5°	2172.5	2121.1	2125.3	2140.6	2165.2	2191.7
25°	2149.8	2094.6	2101.1	2116.5	2141.8	2168.7
25.5°	2126.4	2068.1	2076.5	2092.7	2117.6	2144.1
26°	2102.6	2040.9	2050.5	2068.5	2093.8	2118.8
26.5°	2076.5	2013.2	2024.7	2043.9	2069.6	2093.0
27°	2050.5	1984.4	1997.5	2018.2	2044.7	2066.6
27.5°	2024.0	1955.7	1969.9	1992.9	2019.0	2039.3
28°	1996.3	1925.7	1941.1	1967.6	1992.1	2011.7
28.5°	1968.3	1895.8	1913.1	1941.1	1964.9	1983.7
29°	1939.9	1865.1	1884.3	1916.1	1937.6	1954.1
29.5°	1911.9	1835.5	1855.1	1890.4	1910.0	1925.3
30°	1882.4	1804.8	1825.2	1863.9	1880.4	1895.8
30.5°	1852.8	1773.4	1795.6	1837.1	1852.0	1865.5
31°	1822.9	1741.5	1765.3	1811.4	1822.9	1835.2
31.5°	1792.6	1710.8	1735.0	1784.1	1793.7	1804.5
32°	1762.6	1679.0	1704.3	1756.9	1763.4	1774.1
32.5°	1733.1	1646.7	1674.4	1728.5	1734.6	1743.1
33°	1702.4	1614.5	1643.7	1701.6	1705.1	1711.2
33.5°	1671.3	1581.1	1613.0	1673.6	1674.7	1679.4
34°	1640.2	1549.3	1581.5	1645.2	1644.8	1647.5
34.5°	1609.1	1516.3	1549.6	1616.0	1614.9	1614.5
35°	1578.0	1485.2	1518.6	1586.9	1584.6	1581.1
35.5°	1547.3	1447.9	1487.1	1558.1	1555.0	1549.6
36°	1515.5	1398.4	1455.2	1528.9	1523.9	1515.9
36.5°	1484.4	1339.3	1424.1	1499.7	1493.2	1486.3
37°	1453.3	1278.3	1394.2	1470.2	1462.5	1438.0
37.5°	1422.2	1218.8	1361.2	1441.0	1431.8	1389.2
38°	1393.8	1156.3	1313.6	1412.3	1401.1	1325.5
38.5°	1345.9	1094.5	1258.0	1383.9	1369.3	1266.8
39°	1293.3	1030.4	1201.2	1356.2	1342.0	1207.3
39.5°	1236.1	966.3	1145.2	1327.8	1294.1	1147.1
40°	1178.9	904.9	1088.7	1300.2	1244.9	1083.0
40.5°	1122.1	844.3	1031.2	1273.3	1188.1	1020.0
41°	1063.0	786.7	970.9	1246.8	1132.5	956.0
41.5°	1003.5	730.7	911.1	1220.4	1079.1	893.4
42°	942.1	674.7	853.1	1193.9	1025.4	833.9
42.5°	883.4	618.2	798.2	1168.6	969.4	778.3
43°	825.9	564.1	744.5	1142.8	911.4	722.6
43.5°	771.0	512.3	691.2	1117.5	853.5	665.8



TEST NUMBER: P776490

CATALOG NUMBER: HCDJBL3040CSD-HCD8TRH-4000lm-2700K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
45°	610.2	368.4	535.7	1040.8	693.5	503.5
45.5°	558.0	325.0	486.2	1002.4	641.7	454.4
46°	506.2	283.2	440.6	961.3	590.6	407.6
46.5°	458.2	246.8	394.5	913.4	540.3	360.7
47°	412.5	213.8	350.8	869.6	491.2	317.4
47.5°	370.7	185.4	308.2	816.3	444.4	277.5
48°	329.3	161.6	269.4	762.2	399.1	241.0
48.5°	287.4	142.0	234.1	699.6	355.7	209.5
49°	246.0	126.6	202.2	641.7	314.3	182.3
49.5°	211.8	111.3	174.2	584.1	274.8	159.3
50°	182.7	95.9	151.6	531.1	238.3	139.7
50.5°	157.0	80.6	131.2	479.7	204.9	124.3
51°	136.2	65.2	116.3	432.9	176.5	108.6
51.5°	118.6	54.9	101.3	386.5	152.7	93.3
52°	103.2	51.4	86.3	344.6	131.6	77.9
52.5°	88.6	49.1	71.4	303.6	116.3	62.6
53°	74.1	47.2	57.9	266.3	100.5	54.5
53.5°	60.3	45.3	47.6	231.4	85.2	51.8
54°	49.5	43.4	44.1	201.1	69.5	49.9
54.5°	44.1	41.4	42.6	172.7	56.0	48.0
55°	42.6	39.9	41.1	148.1	46.4	46.1
55.5°	41.1	38.4	39.5	130.9	43.7	44.1
56°	39.5	36.8	38.0	114.0	42.2	42.2
56.5°	38.0	35.3	36.5	97.1	40.7	40.7
57°	36.8	33.8	35.3	79.8	39.1	39.1
57.5°	35.3	32.2	33.8	63.3	37.6	37.6
58°	34.2	31.1	32.6	54.5	36.5	36.1
58.5°	33.0	29.9	31.5	47.2	35.3	34.5
59°	31.9	28.8	30.3	41.4	34.2	33.0
59.5°	30.7	27.6	29.2	36.8	33.0	31.9
60°	29.5	26.5	28.4	33.4	31.9	30.7
60.5°	28.8	25.3	27.2	31.5	30.7	29.5
61°	27.6	24.2	26.5	30.3	29.5	28.4
61.5°	26.5	23.4	25.3	29.2	28.4	27.2
62°	25.7	22.3	24.6	28.0	27.6	26.1
62.5°	24.6	21.5	23.4	27.2	26.5	24.9
63°	23.8	20.3	22.6	26.1	25.7	23.8
63.5°	23.0	19.6	21.9	25.3	24.6	23.0
64°	21.9	18.8	21.1	24.6	23.8	21.9
64.5°	21.1	18.0	20.3	23.4	23.0	21.1
65°	20.3	17.3	19.6	22.6	22.3	20.3
65.5°	19.6	16.5	18.8	21.9	21.1	19.6
66°	18.8	15.7	18.0	21.1	20.3	18.4



TEST NUMBER: P776490

CATALOG NUMBER: HCDJBL3040CSD-HCD8TRH-4000lm-2700K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
67.5°	16.9	13.8	16.1	18.8	18.0	16.5
68°	16.1	13.0	15.4	18.0	17.3	15.7
68.5°	15.4	12.7	15.0	17.3	16.9	15.0
69°	15.0	11.9	14.2	16.5	16.1	14.2
69.5°	14.2	11.5	13.8	16.1	15.4	13.8
70°	13.8	11.1	13.0	15.4	14.6	13.0
70.5°	13.0	10.4	12.7	14.6	14.2	12.7
71°	12.7	10.0	11.9	14.2	13.4	11.9
71.5°	11.9	9.6	11.5	13.4	13.0	11.5
72°	11.5	9.2	11.1	12.7	12.3	10.7
72.5°	11.1	8.4	10.4	12.3	11.9	10.4
73°	10.4	8.1	10.0	11.5	11.1	10.0
73.5°	10.0	7.7	9.6	11.1	10.7	9.2
74°	9.6	7.3	9.2	10.4	10.0	8.8
74.5°	8.8	6.9	8.4	10.0	9.6	8.4
75°	8.4	6.5	8.1	9.6	9.2	8.1
75.5°	8.1	6.1	7.7	8.8	8.8	7.7
76°	7.7	5.8	7.3	8.4	8.1	7.3
76.5°	7.3	5.8	6.9	8.1	7.7	6.9
77°	6.9	5.4	6.5	7.3	7.3	6.5
77.5°	6.5	5.0	6.1	6.9	6.9	6.1
78°	6.1	4.6	5.8	6.5	6.5	5.8
78.5°	5.8	4.2	5.4	6.1	5.8	5.4
79°	5.4	3.8	5.0	5.8	5.4	5.0
79.5°	5.0	3.8	4.6	5.4	5.0	4.6
80°	4.6	3.5	4.2	4.6	4.6	4.2
80.5°	4.2	3.1	3.8	4.2	4.2	3.8
81°	3.8	3.1	3.5	3.8	3.8	3.5
81.5°	3.5	2.7	3.1	3.5	3.5	3.5
82°	3.1	2.3	3.1	3.1	3.1	3.1
82.5°	2.7	2.3	2.7	3.1	2.7	2.7
83°	2.3	1.9	2.3	2.7	2.3	2.3
83.5°	2.3	1.5	1.9	2.3	1.9	2.3
84°	1.9	1.5	1.5	1.9	1.5	1.9
84.5°	1.5	1.2	1.5	1.5	1.5	1.5
85°	1.2	1.2	1.2	1.5	1.2	1.5
85.5°	1.2	0.8	0.8	1.2	0.8	1.2
86°	0.8	0.4	0.8	0.8	0.8	0.8
86.5°	0.4	0.4	0.4	0.8	0.4	0.8
87°	0.4	0.0	0.4	0.4	0.4	0.4
87.5°	0.0	0.0	0.0	0.0	0.4	0.4
88°	0.0	0.0	0.0	0.0	0.0	0.4
88.5°	0.0	0.0	0.0	0.0	0.0	0.0



TEST NUMBER: P776490
CATALOG NUMBER: HCDJBL3040CSD-HCD8TRH-4000lm-2700K

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
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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°	2322.9	2370.5	2420.4	2459.2	2479.5	2491.4	2484.9	2458.4	2413.1	2377.8	2340.6
22°	2301.8	2350.2	2401.2	2441.5	2462.6	2474.5	2468.0	2440.7	2394.7	2359.0	2320.2



44°	608.6	844.3	1285.6	1121.4	939.8	1159.7	1391.9	1030.4	740.7	895.3	1183.5
44.5°	555.3	788.3	1259.5	1062.3	877.3	1098.3	1365.8	970.2	685.4	838.1	1158.6



66.5°	17.7	20.3	23.4	21.9	19.2	21.5	23.8	20.7	17.3	19.2	20.3
67°	16.9	19.6	22.6	21.1	18.4	20.7	23.0	20.0	16.5	18.4	19.6



89°	0.0	0.0	0.4	0.4	0.8	0.8	0.4	0.4	0.0	0.0	0.0
89.5°	0.0	0.0	0.0	0.4	0.4	0.4	0.4	0.0	0.0	0.0	0.0

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21.5°	2303.0	2258.5	2261.5	2277.3	2300.3	2322.9
22°	2282.2	2236.6	2239.3	2255.4	2278.4	2301.8



44°	715.7	461.7	638.6	1092.2	797.1	608.6
44.5°	662.8	415.6	586.8	1066.5	745.3	555.3

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66.5°	18.0	15.0	17.3	20.3	19.6	17.7
67°	17.7	14.6	16.9	19.6	18.8	16.9

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Peachtree City, GA 30269

Scaled Data Report



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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Scaled Data Report



(END OF REPORT)