

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: P776334

Luminaire Tested: HCDJBL3040CSD-HCD4TSQMW-4000lm-5000K

Issue Date: 2/7/2024

**Test Information**

Test Method: LM-79-2019  
Report Number: P776334  
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: HCDJBS3040CSD-HCD4TSQMW-4000lm-5000K  
Description: 4 INCH SQUARE MEDIUM MATTE WHITE TRIM  
Light Source: SELECTABLE LUMENS AND CCT ARRAY 90CRI / 5000K CCT  
Ballast/Driver: -

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 4250.2 lumens  
Efficiency: N/A  
Efficacy: 110.4 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

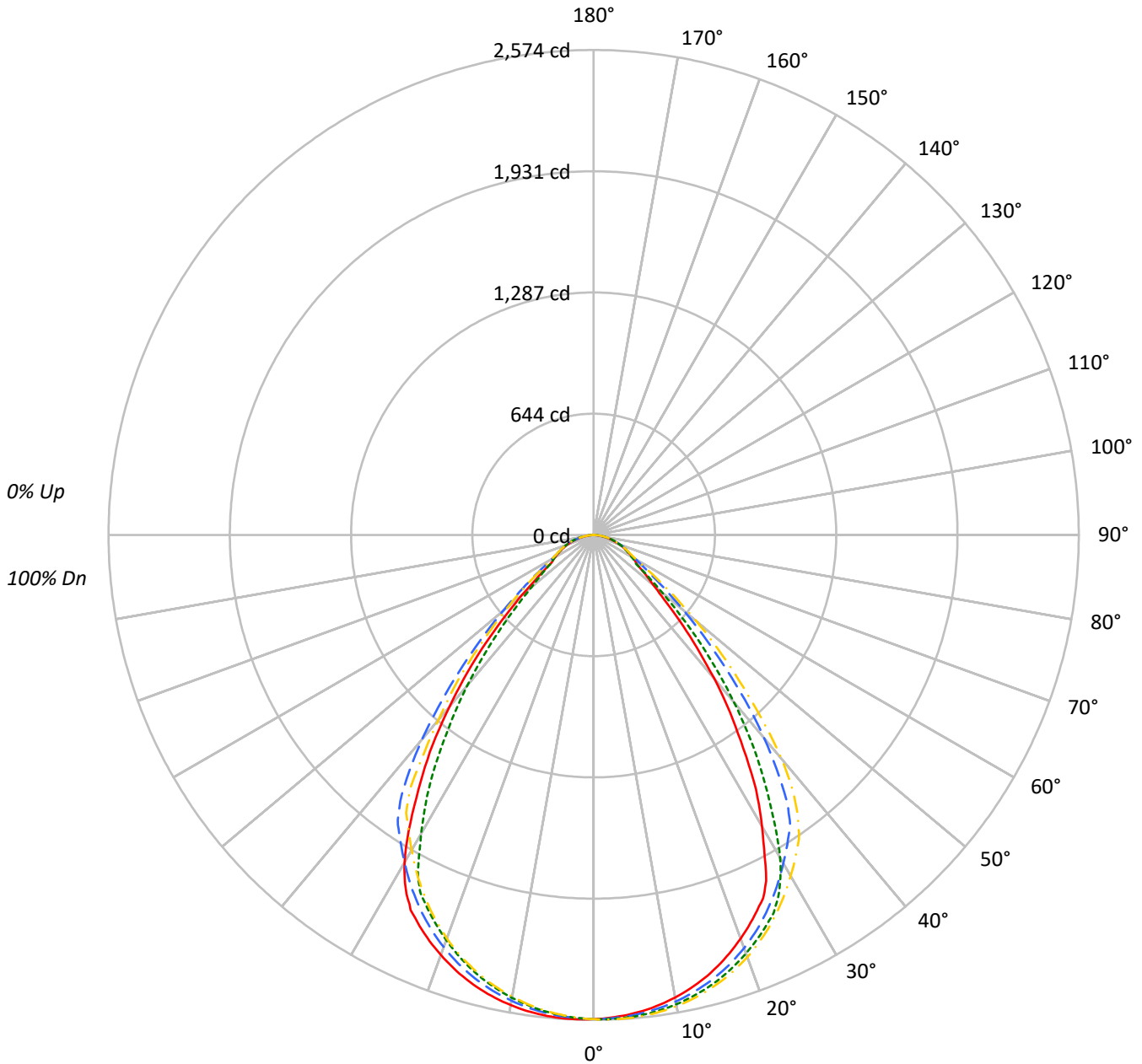
Input Watts (W): 38.5  
Input Voltage (V): NR  
Input Current (A<sub>in</sub>): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 24 FT



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### Luminous Intensity Polar Plot





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

RF	20					20					20					20										
RC	80					70					50					30					10					0
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	50	30	10	50	30	10	0		
RCR																										
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100								
1	111	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°	254024	254024	254024	254024
5°	252683	254429	254677	252802
10°	250185	253878	254330	250436
15°	246081	252067	252773	246541
20°	239781	248606	249511	240686
25°	232113	243837	244557	233051
30°	203830	225675	229042	208875
35°	167216	189141	193231	173587
40°	128255	149158	153635	134590
45°	90175	108235	112582	96004
50°	63784	72457	76178	66045
55°	50474	49837	52801	51526
60°	47306	45843	46654	47227
65°	44578	44016	44297	45630
70°	41124	42193	41731	44216
75°	37006	39985	38419	42658
80°	29314	36999	33299	40072
85°	14403	30167	19960	35270

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 135°  
 Vertical Angle: 45°  
 Luminance: 152267 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	242.6	5.7
10°-20°	686.5	16.2
20°-30°	1000.6	23.5
30°-40°	1006.5	23.7
40°-50°	659.9	15.5
50°-60°	319.7	7.5
60°-70°	194.3	4.6
70°-80°	111.9	2.6
80°-90°	28.1	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°	1929.7	45.4
0°-40°	2936.2	69.1
0°-60°	3915.8	92.1
0°-90°	4250.2	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4250.2	100.0

**CANDELA DISTRIBUTION:**

	0°	90°	180°	270°	360°	Flux
0°	2570	2570	2570	2570	2570	
5°	2547	2564	2567	2548	2547	241
15°	2405	2463	2470	2409	2405	677
25°	2128	2236	2242	2137	2128	959
35°	1386	1568	1601	1439	1386	864
45°	645	774	805	687	645	508
55°	293	289	306	299	293	274
65°	191	188	189	195	191	189
75°	97	105	101	112	97	102
85°	13	27	18	31	13	19
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°	2570.0	2570.0	2570.0	2570.0	2570.0	2570.0	2570.0	2570.0	2570.0	2570.0	2570.0
0.5°	2569.6	2568.8	2569.2	2569.2	2570.9	2571.3	2572.1	2572.5	2571.7	2570.0	2568.8
1°	2568.4	2567.6	2568.8	2569.6	2571.3	2572.1	2572.9	2573.3	2572.1	2570.0	2568.4
1.5°	2566.4	2566.4	2568.4	2569.6	2571.3	2572.5	2573.7	2573.7	2572.5	2570.0	2567.6
2°	2564.3	2564.7	2567.6	2569.6	2571.3	2572.5	2573.7	2573.7	2572.5	2569.6	2566.4
2.5°	2562.3	2563.1	2566.4	2568.8	2570.9	2572.5	2573.7	2573.7	2572.5	2569.2	2565.1
3°	2559.4	2560.6	2564.7	2568.0	2569.6	2572.1	2573.3	2573.7	2571.7	2568.4	2563.5
3.5°	2556.9	2558.2	2563.1	2567.2	2568.8	2571.3	2572.9	2572.9	2570.9	2567.2	2561.4
4°	2554.1	2555.7	2561.0	2565.9	2567.6	2570.4	2572.1	2572.5	2570.0	2565.5	2559.8
4.5°	2550.4	2552.4	2558.6	2564.3	2566.4	2568.8	2571.3	2571.3	2568.8	2563.9	2557.4
5°	2546.7	2549.2	2555.7	2562.3	2564.3	2567.6	2569.6	2569.6	2566.8	2561.9	2554.1
5.5°	2543.0	2545.5	2552.9	2560.2	2562.3	2565.5	2568.0	2568.0	2565.1	2559.8	2551.2
6°	2538.9	2541.8	2550.0	2557.8	2559.8	2563.1	2565.9	2565.9	2562.7	2556.9	2547.9
6.5°	2534.4	2537.7	2546.7	2555.3	2556.9	2561.0	2563.5	2563.5	2559.8	2554.1	2544.3
7°	2529.1	2532.8	2543.0	2552.4	2553.7	2558.2	2561.0	2561.0	2557.4	2551.2	2540.2
7.5°	2523.8	2527.9	2538.9	2549.2	2550.4	2555.3	2558.2	2557.8	2554.1	2547.5	2536.1
8°	2518.5	2523.0	2534.0	2545.5	2546.7	2552.0	2554.9	2554.5	2550.8	2543.9	2531.6
8.5°	2512.4	2516.9	2529.9	2541.8	2543.0	2548.4	2551.2	2551.2	2547.1	2539.8	2526.7
9°	2506.2	2511.1	2525.0	2537.7	2538.9	2544.7	2547.5	2547.5	2543.0	2535.7	2521.8
9.5°	2499.7	2505.0	2519.7	2532.8	2534.4	2540.6	2543.4	2543.0	2538.5	2530.8	2516.5
10°	2492.7	2498.9	2514.0	2528.3	2529.5	2535.7	2539.4	2538.9	2534.0	2525.9	2510.7
10.5°	2485.4	2491.9	2508.3	2523.0	2524.2	2530.8	2534.4	2534.0	2529.1	2521.0	2504.6
11°	2478.0	2484.5	2502.1	2517.7	2518.9	2525.4	2529.5	2529.1	2524.2	2515.2	2498.0
11.5°	2470.2	2477.2	2495.6	2512.0	2512.8	2520.1	2524.2	2523.4	2518.5	2509.5	2491.5
12°	2461.6	2469.4	2488.6	2505.8	2506.6	2514.8	2518.9	2517.7	2512.4	2503.4	2484.5
12.5°	2453.0	2461.2	2481.3	2499.3	2500.1	2508.7	2512.8	2511.5	2506.2	2496.8	2477.2
13°	2444.0	2453.0	2473.9	2493.1	2493.5	2501.7	2506.6	2505.4	2499.7	2490.3	2469.8
13.5°	2435.1	2444.0	2466.5	2485.8	2486.6	2495.6	2500.1	2498.5	2492.7	2482.9	2461.6
14°	2425.6	2434.6	2458.0	2478.8	2479.2	2488.2	2493.1	2491.5	2485.4	2475.1	2453.5
14.5°	2415.4	2424.8	2449.8	2471.0	2471.5	2480.5	2485.8	2484.5	2478.0	2467.4	2444.9
15°	2404.8	2415.0	2440.8	2463.3	2463.3	2473.1	2478.4	2476.4	2470.2	2459.6	2435.9
15.5°	2393.7	2404.8	2431.8	2455.1	2455.1	2465.3	2470.6	2468.6	2461.6	2451.0	2426.5
16°	2382.7	2394.1	2422.0	2446.5	2446.1	2456.3	2462.5	2460.0	2453.0	2442.4	2417.1
16.5°	2370.8	2383.1	2412.1	2437.1	2436.7	2447.7	2453.9	2451.4	2444.0	2433.0	2406.8
17°	2359.0	2371.6	2402.3	2428.1	2427.3	2438.3	2444.9	2442.8	2435.1	2423.6	2396.6
17.5°	2346.3	2359.8	2391.7	2418.7	2417.5	2429.3	2435.5	2433.4	2424.8	2413.8	2386.0
18°	2334.0	2347.9	2380.6	2408.5	2407.2	2419.5	2425.6	2423.2	2414.6	2403.6	2374.9
18.5°	2320.5	2334.8	2369.6	2398.2	2397.0	2408.9	2415.8	2413.0	2404.8	2393.3	2363.5
19°	2307.4	2322.2	2357.7	2388.0	2386.0	2397.8	2405.6	2402.3	2394.1	2382.3	2352.0
19.5°	2293.5	2308.7	2345.9	2376.6	2374.9	2388.0	2395.0	2391.3	2383.5	2370.8	2340.2
20°	2279.6	2295.6	2333.6	2365.1	2363.5	2376.1	2383.5	2380.6	2372.1	2359.4	2327.5
20.5°	2265.7	2281.7	2320.5	2353.2	2351.6	2364.7	2372.5	2368.8	2360.2	2347.5	2314.4
21°	2251.4	2267.3	2307.4	2341.4	2339.3	2352.8	2360.6	2356.9	2348.3	2335.7	2301.7



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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°	2205.6	2223.2	2266.1	2302.9	2302.1	2315.6	2323.0	2320.1	2311.1	2297.2	2260.4
23°	2190.0	2208.0	2251.0	2290.2	2288.6	2302.5	2309.9	2307.0	2298.0	2283.7	2245.7
23.5°	2174.5	2192.1	2235.8	2276.7	2275.1	2289.4	2296.4	2293.5	2285.3	2269.8	2230.5
24°	2157.7	2176.1	2220.7	2262.8	2261.6	2275.9	2282.5	2280.0	2271.8	2255.9	2215.4
24.5°	2143.4	2160.6	2205.2	2248.9	2247.7	2262.0	2267.8	2266.1	2257.5	2242.0	2199.8
25°	2128.3	2144.2	2188.8	2234.2	2235.8	2248.1	2253.0	2251.8	2242.4	2227.7	2183.5
25.5°	2103.7	2127.9	2172.4	2219.5	2219.5	2233.8	2238.3	2237.9	2228.5	2212.9	2167.5
26°	2076.7	2111.9	2155.7	2204.8	2197.4	2218.7	2222.8	2223.2	2214.6	2197.8	2150.4
26.5°	2051.4	2096.8	2138.9	2189.6	2178.6	2204.3	2207.2	2207.6	2189.6	2182.3	2133.6
27°	2013.3	2077.5	2121.7	2173.7	2156.9	2190.9	2191.3	2192.1	2170.4	2165.9	2116.4
27.5°	1973.2	2048.1	2104.1	2159.8	2132.4	2172.0	2175.3	2177.8	2149.1	2151.2	2098.8
28°	1933.6	2024.4	2086.1	2144.2	2105.0	2149.5	2158.1	2157.3	2124.6	2132.8	2080.8
28.5°	1895.1	1992.1	2068.1	2120.9	2076.7	2130.7	2141.8	2133.6	2098.4	2108.6	2063.2
29°	1857.9	1953.6	2050.1	2100.0	2046.0	2107.4	2125.0	2114.8	2069.8	2088.6	2044.4
29.5°	1821.9	1914.7	2032.1	2079.2	2013.3	2082.0	2107.8	2091.9	2039.5	2066.5	2026.4
30°	1785.9	1875.9	2013.3	2055.0	1977.3	2055.5	2090.2	2066.1	2006.8	2041.5	2007.6
30.5°	1750.7	1837.8	1994.9	2028.9	1938.9	2027.2	2073.0	2039.5	1972.0	2014.6	1988.8
31°	1715.5	1800.6	1976.1	2000.2	1899.2	1996.1	2055.5	2011.3	1934.4	1986.7	1970.0
31.5°	1679.5	1765.4	1956.9	1971.2	1857.5	1965.1	2037.5	1980.6	1893.5	1956.5	1951.1
32°	1640.3	1729.9	1938.5	1939.7	1815.3	1930.7	2019.1	1947.9	1851.3	1925.0	1931.9
32.5°	1602.2	1695.5	1918.8	1906.6	1772.4	1893.1	2001.1	1913.9	1809.2	1890.2	1912.3
33°	1560.9	1659.9	1900.8	1869.7	1729.9	1854.2	1982.2	1876.7	1767.1	1854.2	1893.1
33.5°	1517.6	1624.3	1883.2	1833.8	1688.1	1813.7	1964.6	1837.8	1723.7	1815.3	1873.8
34°	1472.2	1586.3	1865.2	1794.5	1647.2	1772.4	1947.1	1797.3	1681.2	1775.7	1857.1
34.5°	1429.6	1547.8	1836.6	1753.2	1607.1	1731.1	1924.2	1755.6	1640.7	1734.8	1835.4
35°	1385.8	1507.7	1804.3	1711.9	1567.5	1689.8	1894.7	1713.1	1601.4	1692.2	1803.1
35.5°	1344.5	1465.6	1776.5	1671.0	1528.2	1648.9	1868.9	1673.0	1563.0	1651.3	1773.6
36°	1303.6	1422.3	1741.3	1630.5	1488.9	1609.2	1843.2	1632.1	1523.3	1611.2	1746.6
36.5°	1265.2	1379.3	1701.2	1590.4	1448.8	1569.5	1812.1	1592.0	1482.8	1571.1	1710.6
37°	1226.3	1337.2	1660.3	1549.9	1407.9	1530.2	1780.2	1552.3	1444.3	1531.9	1670.1
37.5°	1188.7	1298.3	1617.8	1511.4	1366.2	1492.6	1746.2	1514.3	1403.0	1494.2	1629.2
38°	1151.1	1257.4	1576.1	1473.0	1323.7	1452.9	1710.2	1475.4	1360.9	1455.8	1587.5
38.5°	1113.0	1219.8	1533.9	1434.9	1281.5	1414.5	1673.8	1438.2	1317.5	1418.6	1544.1
39°	1073.7	1182.6	1492.6	1396.9	1240.2	1375.6	1633.7	1398.5	1275.0	1380.5	1502.0
39.5°	1034.1	1146.1	1450.9	1358.0	1198.1	1335.1	1592.4	1359.3	1233.3	1342.5	1458.2
40°	994.0	1107.7	1407.5	1320.0	1156.0	1295.0	1549.1	1318.4	1190.7	1303.2	1414.5
40.5°	954.7	1071.7	1364.2	1280.7	1115.5	1254.1	1504.5	1277.9	1149.8	1262.7	1369.5
41°	916.3	1034.1	1320.0	1240.6	1077.0	1212.8	1457.4	1236.1	1109.3	1222.2	1325.3
41.5°	879.4	996.8	1276.6	1201.0	1037.3	1173.1	1409.6	1195.2	1071.3	1182.1	1281.1
42°	842.6	958.8	1232.0	1160.9	998.9	1133.9	1361.3	1154.7	1032.0	1142.5	1236.5
42.5°	808.3	921.6	1187.5	1121.6	960.4	1094.6	1313.4	1114.2	994.0	1104.0	1192.8
43°	774.3	884.4	1142.5	1082.7	922.0	1055.7	1267.2	1075.8	956.8	1065.6	1150.2
43.5°	741.2	848.4	1097.9	1045.5	884.4	1018.1	1221.0	1037.7	918.3	1028.8	1104.8



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**CANDELA DISTRIBUTION (continued):**

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
45°	645.1	746.9	970.7	935.5	774.3	908.1	1089.3	926.5	805.4	920.8	980.5
45.5°	615.2	715.0	930.2	900.3	738.3	870.4	1048.8	890.9	769.8	886.8	940.0
46°	586.6	683.5	892.1	865.1	704.0	835.3	1009.1	854.1	734.2	850.8	901.5
46.5°	559.2	652.8	855.3	830.4	670.0	800.9	968.6	818.1	700.3	815.6	863.5
47°	532.6	623.0	819.7	796.0	638.1	765.7	930.2	782.1	667.6	781.3	827.5
47.5°	508.9	593.9	785.0	762.1	607.0	732.2	891.7	746.9	636.1	747.7	791.9
48°	486.8	566.1	750.2	728.5	577.2	699.1	852.9	713.8	605.4	714.6	756.7
48.5°	466.7	539.1	716.6	695.0	549.3	665.9	816.5	681.1	576.8	682.7	722.8
49°	448.3	513.8	684.7	663.5	521.9	634.8	778.4	649.6	548.1	651.6	690.1
49.5°	430.7	490.4	653.7	633.2	496.2	603.3	742.0	617.7	521.5	622.2	658.6
50°	414.8	467.9	623.0	603.8	471.2	574.3	707.2	588.6	495.4	592.7	628.3
50.5°	400.5	447.5	593.1	575.1	447.1	545.3	672.9	559.2	470.4	564.9	598.0
51°	387.0	429.1	564.9	548.5	424.6	518.3	640.6	531.8	447.1	537.9	570.2
51.5°	373.9	411.9	537.9	521.5	404.1	492.5	609.1	505.6	425.4	512.5	543.2
52°	361.6	396.8	512.1	496.6	384.5	467.9	579.2	481.0	405.0	488.0	517.4
52.5°	349.3	382.0	488.4	471.6	368.1	443.8	549.3	455.7	385.3	463.4	492.9
53°	337.9	368.6	465.1	447.9	351.8	421.3	522.4	432.4	367.7	441.4	469.2
53.5°	325.6	355.9	443.4	424.6	335.4	399.6	495.4	411.1	352.2	419.3	447.1
54°	314.1	344.0	422.1	403.3	319.1	379.6	470.4	390.6	337.1	398.4	425.8
54.5°	303.1	332.1	402.9	382.9	303.1	363.2	445.9	371.0	321.5	378.8	406.6
55°	292.9	320.7	384.5	363.6	289.2	346.5	423.8	354.6	306.4	362.8	388.2
55.5°	283.9	309.2	367.3	346.5	278.2	330.1	401.3	338.7	292.5	346.9	370.2
56°	277.3	298.2	351.0	329.7	269.6	313.3	380.4	322.7	280.6	330.9	355.5
56.5°	272.4	287.2	335.8	314.6	264.2	297.0	363.6	306.8	270.8	315.4	340.3
57°	267.9	277.7	321.9	300.2	259.3	283.1	346.5	292.5	264.2	299.4	325.2
57.5°	263.0	269.2	308.4	286.7	254.8	270.8	329.7	279.4	259.3	285.9	310.5
58°	258.5	263.4	296.6	274.1	250.3	261.0	312.9	268.3	254.8	273.7	298.6
58.5°	254.0	258.5	285.9	263.8	245.8	254.8	295.7	258.9	250.3	263.8	287.2
59°	249.1	253.6	275.7	257.3	240.9	249.5	283.1	252.8	245.4	256.1	276.5
59.5°	244.2	249.1	266.7	252.0	236.4	245.0	271.6	247.5	240.9	250.7	267.1
60°	239.3	244.6	258.1	247.1	231.9	240.5	261.4	243.0	236.0	245.8	258.1
60.5°	234.0	239.7	250.3	242.6	227.4	235.6	252.4	238.1	231.5	241.3	249.9
61°	229.5	234.8	243.0	237.7	222.9	231.1	244.6	233.6	226.6	236.8	242.6
61.5°	224.6	229.9	236.0	232.7	218.4	226.6	236.8	229.1	221.7	231.9	235.6
62°	219.7	225.0	229.9	228.2	214.3	222.1	229.9	224.2	217.2	227.4	229.1
62.5°	214.3	219.7	223.3	223.7	209.8	217.6	223.3	219.2	212.7	222.5	222.5
63°	209.8	214.7	217.6	219.2	205.3	212.7	217.2	214.7	207.8	217.6	216.8
63.5°	204.9	209.8	211.9	214.3	200.8	208.2	211.5	209.8	203.3	213.1	211.5
64°	200.0	204.9	207.0	209.8	196.8	203.7	205.8	204.9	198.8	208.2	206.2
64.5°	195.1	200.4	202.1	205.3	192.3	199.2	200.8	200.4	193.9	203.3	201.3
65°	190.6	195.1	197.6	200.8	188.2	195.1	196.3	195.5	189.4	198.8	196.3
65.5°	185.7	190.2	193.1	196.3	183.7	190.6	191.4	191.0	184.9	193.9	191.8
66°	180.8	185.7	188.2	191.8	179.6	186.1	186.9	186.1	180.4	189.4	187.3





TEST NUMBER: P776334

CATALOG NUMBER: HCDJBL3040CSD-HCD4TSQMW-4000lm-5000K

**CANDELA DISTRIBUTION (continued):**

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
67.5°	166.5	171.0	174.3	178.3	166.9	173.0	173.4	172.2	166.9	175.5	173.8
68°	162.0	166.1	169.8	173.8	162.8	168.5	168.5	167.7	162.4	171.0	169.3
68.5°	157.1	161.2	164.8	169.3	158.3	164.4	164.0	163.2	157.9	166.1	164.8
69°	152.6	156.7	160.3	164.8	154.2	159.9	159.5	158.7	153.4	161.6	159.9
69.5°	146.8	151.8	155.4	160.8	150.1	155.4	155.0	153.8	148.9	157.1	155.4
70°	142.3	148.5	150.9	156.3	146.0	151.3	150.1	149.3	144.4	152.6	150.9
70.5°	138.3	143.6	146.0	151.8	141.9	147.3	145.6	144.8	140.3	148.1	146.4
71°	133.8	138.7	141.5	148.1	137.8	142.8	141.1	140.3	135.8	143.6	141.9
71.5°	129.7	133.3	137.0	143.6	133.8	138.3	136.6	135.8	131.3	138.7	137.4
72°	124.8	128.4	132.5	139.5	129.7	134.2	132.1	131.3	126.8	134.2	132.9
72.5°	120.3	123.5	128.0	135.0	125.6	130.1	127.6	126.8	122.7	129.7	128.4
73°	115.4	119.0	123.5	130.9	121.1	126.0	123.1	122.3	118.2	125.2	123.9
73.5°	110.9	114.1	119.0	126.4	117.0	121.5	119.0	117.8	113.7	120.7	119.4
74°	105.9	109.6	114.5	122.3	113.3	117.4	114.5	113.3	109.6	116.2	114.9
74.5°	101.4	104.7	109.6	117.8	109.2	113.3	110.0	108.8	105.1	111.7	110.9
75°	96.9	99.8	105.1	113.7	104.7	108.8	105.9	104.3	100.6	107.2	106.4
75.5°	92.4	95.3	100.6	109.2	100.6	104.7	101.4	99.8	96.5	102.7	101.9
76°	87.5	90.4	96.1	105.1	96.5	100.6	96.9	95.3	92.0	98.2	97.4
76.5°	83.0	85.9	91.6	101.0	92.9	96.5	92.9	90.8	87.9	94.1	92.9
77°	78.5	81.0	87.1	96.5	88.8	92.4	88.8	86.3	83.4	89.6	88.4
77.5°	74.0	76.5	82.6	92.4	84.7	88.4	84.7	81.8	79.4	85.1	84.3
78°	69.5	71.6	78.5	87.9	80.6	83.9	80.2	77.3	75.3	80.6	79.8
78.5°	65.0	67.1	74.0	83.9	76.5	79.8	76.1	72.8	70.8	76.1	75.3
79°	60.5	62.2	69.9	79.4	72.8	75.7	72.0	68.3	66.7	71.6	71.2
79.5°	56.0	57.7	65.4	75.3	68.7	71.6	67.9	63.8	62.6	67.5	67.1
80°	51.5	53.2	61.4	71.2	65.0	67.5	63.8	59.7	58.5	63.0	63.0
80.5°	47.4	48.7	57.3	66.7	60.9	63.4	60.1	55.2	54.4	58.5	58.5
81°	42.9	43.8	53.2	62.6	57.3	59.3	56.0	51.1	50.3	54.0	54.8
81.5°	38.5	39.3	49.1	58.5	53.2	55.6	52.4	47.4	46.2	49.9	50.7
82°	34.0	35.2	45.0	54.4	49.5	51.5	48.3	43.4	41.7	45.4	46.6
82.5°	29.9	31.1	41.3	50.7	45.8	47.9	44.6	39.7	37.6	40.9	42.9
83°	25.4	27.4	37.6	46.6	42.1	43.8	40.9	36.0	34.0	37.2	39.3
83.5°	20.9	23.3	34.0	42.9	38.0	40.1	37.6	32.3	29.9	33.1	36.0
84°	16.8	20.0	30.3	38.9	34.4	36.0	34.0	28.6	25.8	29.0	32.7
84.5°	14.7	16.8	27.0	35.2	30.7	32.3	30.7	25.4	21.7	25.4	29.5
85°	12.7	14.3	23.7	31.1	26.6	28.6	27.0	21.7	17.6	21.3	26.2
85.5°	10.2	11.9	20.0	27.4	22.9	24.5	23.7	18.4	14.7	18.0	22.5
86°	8.2	9.8	16.8	23.3	19.2	20.9	20.5	16.0	12.3	15.5	19.6
86.5°	6.1	7.8	13.9	19.6	15.5	17.2	17.2	13.5	10.6	13.5	16.4
87°	4.5	5.3	10.6	16.0	11.9	13.5	13.9	11.0	9.0	11.5	13.1
87.5°	2.5	3.3	7.8	12.3	8.2	9.8	10.6	8.6	7.0	9.0	9.8
88°	0.8	1.2	4.5	9.0	4.9	6.1	7.4	6.5	5.3	7.0	7.0
88.5°	0.0	0.4	1.6	5.3	1.6	2.9	4.1	4.1	3.7	4.9	3.7



TEST NUMBER: P776334

CATALOG NUMBER: HCDJBL3040CSD-HCD4TSQMW-4000lm-5000K

**CANDELA DISTRIBUTION (continued):**

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
90°	0.0	0.4	0.4	0.0	0.0	0.0	0.4	0.4	0.0	0.4	0.4



TEST NUMBER: P776334

CATALOG NUMBER: HCDJBL3040CSD-HCD4TSQMW-4000lm-5000K

**CANDELA DISTRIBUTION (continued):**

	247.5°	270°	292.5°	315°	337.5°	360°
0°	2570.0	2570.0	2570.0	2570.0	2570.0	2570.0
0.5°	2567.2	2569.2	2569.2	2569.6	2570.0	2569.6
1°	2566.4	2568.0	2567.6	2568.0	2568.8	2568.4
1.5°	2564.7	2566.4	2565.5	2565.9	2566.8	2566.4
2°	2563.1	2564.7	2563.5	2563.5	2564.3	2564.3
2.5°	2561.0	2562.7	2561.0	2561.0	2561.9	2562.3
3°	2558.6	2560.2	2558.2	2558.2	2559.0	2559.4
3.5°	2555.7	2557.8	2555.7	2555.3	2556.1	2556.9
4°	2552.9	2554.5	2552.4	2552.0	2552.9	2554.1
4.5°	2549.6	2551.6	2548.8	2548.4	2549.2	2550.4
5°	2545.9	2547.9	2544.7	2544.7	2545.5	2546.7
5.5°	2542.2	2544.3	2540.6	2540.2	2541.4	2543.0
6°	2538.1	2539.8	2536.1	2535.7	2536.9	2538.9
6.5°	2533.6	2535.3	2531.6	2531.2	2532.0	2534.4
7°	2528.7	2530.4	2526.3	2525.9	2527.1	2529.1
7.5°	2523.4	2525.4	2521.0	2520.5	2521.4	2523.8
8°	2518.1	2519.7	2515.2	2514.8	2516.0	2518.5
8.5°	2512.4	2514.0	2509.1	2508.7	2509.9	2512.4
9°	2506.6	2507.9	2503.0	2502.1	2503.4	2506.2
9.5°	2500.1	2501.3	2496.4	2495.6	2496.8	2499.7
10°	2493.1	2495.2	2489.5	2488.2	2489.9	2492.7
10.5°	2486.2	2488.2	2482.1	2481.3	2482.1	2485.4
11°	2478.8	2480.5	2474.7	2473.5	2474.7	2478.0
11.5°	2471.5	2472.7	2466.5	2465.3	2467.0	2470.2
12°	2463.3	2464.9	2458.4	2457.1	2458.4	2461.6
12.5°	2455.1	2456.3	2449.8	2448.5	2449.4	2453.0
13°	2446.5	2447.7	2440.8	2439.6	2440.8	2444.0
13.5°	2437.1	2438.7	2431.8	2430.6	2431.4	2435.1
14°	2428.1	2429.3	2422.0	2420.7	2422.0	2425.6
14.5°	2418.3	2419.5	2412.1	2410.5	2411.3	2415.4
15°	2408.5	2409.3	2401.9	2400.3	2400.7	2404.8
15.5°	2397.8	2398.6	2390.9	2389.6	2389.6	2393.7
16°	2387.2	2388.0	2379.8	2378.6	2379.0	2382.7
16.5°	2375.7	2377.0	2368.8	2367.1	2367.6	2370.8
17°	2364.3	2365.1	2357.3	2355.7	2355.7	2359.0
17.5°	2352.4	2353.2	2345.1	2343.4	2343.0	2346.3
18°	2340.6	2340.6	2332.8	2331.2	2330.7	2334.0
18.5°	2327.5	2327.9	2319.7	2318.9	2317.7	2320.5
19°	2314.8	2315.2	2306.6	2305.4	2304.2	2307.4
19.5°	2301.7	2301.7	2293.1	2292.3	2290.7	2293.5
20°	2287.8	2288.2	2279.2	2278.4	2276.3	2279.6
20.5°	2273.9	2274.3	2265.3	2263.7	2262.0	2265.7
21°	2259.6	2260.0	2250.6	2249.8	2247.3	2251.4

TEST NUMBER: P776334

CATALOG NUMBER: HCDJBL3040CSD-HCD4TSQMW-4000lm-5000K

**CANDELA DISTRIBUTION (continued):**

	247.5°	270°	292.5°	315°	337.5°	360°
22.5°	2215.0	2215.8	2205.2	2203.1	2201.5	2205.6
23°	2199.4	2200.3	2189.6	2187.6	2185.9	2190.0
23.5°	2184.3	2184.3	2174.1	2170.4	2170.0	2174.5
24°	2168.4	2168.8	2157.7	2154.0	2153.6	2157.7
24.5°	2152.0	2152.4	2140.9	2136.9	2136.9	2143.4
25°	2135.2	2136.9	2124.6	2119.7	2119.7	2128.3
25.5°	2118.9	2122.5	2107.4	2101.3	2103.3	2103.7
26°	2102.5	2103.3	2090.2	2084.5	2085.7	2076.7
26.5°	2087.8	2074.3	2073.5	2065.3	2070.6	2051.4
27°	2071.0	2051.8	2058.3	2047.7	2054.2	2013.3
27.5°	2044.4	2019.9	2040.3	2028.5	2028.5	1973.2
28°	2017.8	1981.4	2013.3	2009.6	2001.9	1933.6
28.5°	1992.5	1942.6	1987.1	1990.4	1975.3	1895.1
29°	1957.3	1904.5	1961.8	1971.6	1938.9	1857.9
29.5°	1919.2	1866.5	1925.8	1951.1	1900.4	1821.9
30°	1881.2	1830.1	1889.0	1932.3	1860.8	1785.9
30.5°	1844.0	1792.4	1849.7	1912.7	1823.5	1750.7
31°	1807.6	1756.4	1813.3	1893.1	1786.3	1715.5
31.5°	1770.4	1720.0	1775.7	1873.0	1749.9	1679.5
32°	1734.4	1683.2	1740.1	1853.0	1715.1	1640.3
32.5°	1698.4	1644.8	1704.9	1833.3	1681.6	1602.2
33°	1662.8	1605.9	1669.3	1814.5	1646.8	1560.9
33.5°	1626.4	1565.4	1633.7	1797.8	1613.3	1517.6
34°	1588.3	1523.7	1598.6	1779.3	1577.7	1472.2
34.5°	1550.3	1481.6	1561.3	1749.1	1541.3	1429.6
35°	1511.4	1438.6	1523.3	1713.1	1502.0	1385.8
35.5°	1470.9	1395.7	1484.8	1686.1	1463.6	1344.5
36°	1430.0	1354.8	1444.3	1647.2	1421.8	1303.6
36.5°	1388.3	1313.4	1404.7	1599.0	1381.3	1265.2
37°	1347.4	1274.6	1363.8	1550.7	1338.8	1226.3
37.5°	1306.9	1235.3	1323.7	1502.8	1299.1	1188.7
38°	1267.6	1196.9	1283.2	1455.4	1259.9	1151.1
38.5°	1229.6	1158.8	1245.5	1410.0	1222.2	1113.0
39°	1190.7	1121.6	1207.1	1365.8	1185.4	1073.7
39.5°	1153.5	1082.3	1171.5	1323.3	1149.4	1034.1
40°	1117.1	1043.1	1134.7	1282.4	1114.2	994.0
40.5°	1081.5	1005.0	1098.3	1243.1	1079.1	954.7
41°	1043.9	966.2	1062.3	1204.6	1043.5	916.3
41.5°	1007.1	928.1	1026.7	1166.2	1006.7	879.4
42°	969.8	890.9	989.9	1128.6	970.3	842.6
42.5°	933.9	854.9	953.1	1092.2	934.3	808.3
43°	897.0	819.3	917.1	1054.5	897.9	774.3
43.5°	860.6	785.0	880.7	1016.1	862.3	741.2

TEST NUMBER: P776334

CATALOG NUMBER: HCDJBL3040CSD-HCD4TSQMW-4000lm-5000K

**CANDELA DISTRIBUTION (continued):**

	247.5°	270°	292.5°	315°	337.5°	360°
45°	759.2	686.8	778.0	901.1	761.6	645.1
45.5°	728.1	655.7	746.5	864.7	730.6	615.2
46°	695.8	625.0	715.0	829.5	699.5	586.6
46.5°	665.1	595.2	683.5	794.8	669.2	559.2
47°	635.2	566.9	653.7	762.1	639.7	532.6
47.5°	606.2	539.1	623.0	731.0	611.1	508.9
48°	577.2	514.6	593.9	701.5	582.9	486.8
48.5°	550.2	490.0	566.5	673.3	555.9	466.7
49°	523.2	468.4	539.9	645.1	530.1	448.3
49.5°	498.6	448.3	514.6	618.5	506.0	430.7
50°	474.1	429.5	490.4	592.3	483.5	414.8
50.5°	452.4	412.3	468.4	566.9	462.2	400.5
51°	432.0	397.2	447.1	542.4	443.0	387.0
51.5°	413.1	382.9	428.7	518.3	425.0	373.9
52°	396.0	369.8	411.9	495.4	408.6	361.6
52.5°	380.4	357.1	395.5	473.3	393.5	349.3
53°	366.1	344.8	380.8	452.4	379.2	337.9
53.5°	353.8	333.0	366.9	432.4	365.7	325.6
54°	342.0	321.1	353.4	413.5	353.0	314.1
54.5°	330.1	310.1	342.0	395.5	340.7	303.1
55°	317.8	299.0	329.7	378.8	329.7	292.9
55.5°	306.0	288.4	317.8	362.8	317.8	283.9
56°	295.3	279.4	306.8	348.1	306.8	277.3
56.5°	284.3	272.0	295.7	334.2	295.7	272.4
57°	274.5	266.3	285.1	320.7	285.5	267.9
57.5°	265.9	261.8	275.3	308.4	276.1	263.0
58°	258.5	256.9	267.1	297.0	268.3	258.5
58.5°	253.2	252.4	260.6	286.3	262.2	254.0
59°	248.7	247.9	255.7	276.5	257.7	249.1
59.5°	244.2	243.8	250.7	266.7	252.8	244.2
60°	239.7	238.9	246.2	258.5	248.3	239.3
60.5°	235.2	234.8	241.7	250.7	243.0	234.0
61°	230.3	230.3	236.8	243.4	238.5	229.5
61.5°	225.8	225.8	232.3	236.4	233.6	224.6
62°	221.3	221.3	227.8	229.9	228.7	219.7
62.5°	216.8	216.8	222.9	223.7	223.3	214.3
63°	212.3	212.7	218.4	218.0	218.4	209.8
63.5°	207.8	208.2	213.9	212.7	213.5	204.9
64°	203.3	204.1	209.4	207.4	208.6	200.0
64.5°	198.8	199.6	204.5	202.9	203.7	195.1
65°	194.7	195.1	200.4	198.4	198.8	190.6
65.5°	190.2	191.0	195.9	193.5	193.9	185.7
66°	185.7	186.5	191.0	189.0	189.0	180.8



TEST NUMBER: P776334

CATALOG NUMBER: HCDJBL3040CSD-HCD4TSQMW-4000lm-5000K

**CANDELA DISTRIBUTION (continued):**

	247.5°	270°	292.5°	315°	337.5°	360°
67.5°	172.6	173.8	177.9	175.5	174.3	166.5
68°	168.1	169.8	173.4	170.6	169.3	162.0
68.5°	164.0	165.3	168.9	165.7	164.4	157.1
69°	159.5	161.2	164.4	161.2	159.9	152.6
69.5°	155.0	157.1	159.9	156.3	155.0	146.8
70°	150.9	153.0	155.4	151.8	150.1	142.3
70.5°	146.4	148.1	151.3	147.7	145.6	138.3
71°	142.3	144.0	148.5	143.2	140.7	133.8
71.5°	137.8	140.3	144.0	138.3	136.2	129.7
72°	133.8	136.2	139.1	133.8	131.7	124.8
72.5°	129.3	132.1	134.6	129.3	126.8	120.3
73°	125.2	128.4	130.1	124.8	121.9	115.4
73.5°	121.1	123.9	125.6	119.9	117.4	110.9
74°	116.6	119.9	121.5	115.4	112.5	105.9
74.5°	112.5	115.8	117.0	110.9	107.6	101.4
75°	108.0	111.7	112.5	106.4	103.1	96.9
75.5°	103.9	107.6	108.4	101.9	98.2	92.4
76°	99.4	103.5	103.9	96.9	93.7	87.5
76.5°	95.3	99.0	99.8	92.4	88.8	83.0
77°	91.2	94.9	95.3	88.4	83.9	78.5
77.5°	86.7	90.8	91.2	83.9	79.4	74.0
78°	82.6	86.7	86.7	79.4	74.4	69.5
78.5°	78.1	82.6	82.6	74.9	69.9	65.0
79°	74.0	78.5	78.1	70.8	65.0	60.5
79.5°	69.9	74.4	74.0	66.3	60.5	56.0
80°	65.4	70.4	69.5	62.2	55.6	51.5
80.5°	61.4	66.3	65.4	58.1	51.1	47.4
81°	57.3	62.6	61.4	54.0	46.6	42.9
81.5°	53.6	58.5	57.3	49.9	42.5	38.5
82°	49.5	54.4	53.2	45.8	38.0	34.0
82.5°	45.4	50.7	49.1	42.1	34.4	29.9
83°	41.7	46.6	45.0	38.5	30.3	25.4
83.5°	37.6	42.5	40.9	34.8	26.6	20.9
84°	34.0	38.9	36.8	31.1	22.9	16.8
84.5°	29.9	35.2	33.1	27.8	19.6	14.7
85°	26.2	31.1	29.0	24.1	16.8	12.7
85.5°	22.1	27.4	25.0	20.9	14.3	10.2
86°	18.4	23.3	20.9	17.2	11.9	8.2
86.5°	14.3	19.6	17.2	13.9	9.4	6.1
87°	10.6	15.5	13.5	10.6	7.0	4.5
87.5°	7.0	12.3	10.2	7.8	4.5	2.5
88°	3.7	8.6	7.0	4.5	2.0	0.8
88.5°	1.2	4.9	3.7	1.2	0.8	0.0



TEST NUMBER: P776334

CATALOG NUMBER: HCDJBL3040CSD-HCD4TSQMW-4000lm-5000K

**CANDELA DISTRIBUTION (continued):**

	247.5°	270°	292.5°	315°	337.5°	360°
90°	0.0	0.0	0.0	0.4	0.4	0.0



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Peachtree City, GA 30269

Scaled Data Report





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

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Peachtree City, GA 30269

Scaled Data Report



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Scaled Data Report





21.5°	2236.3	2252.6	2293.9	2329.1	2327.1	2340.6	2348.7	2345.1	2336.5	2322.6	2288.6
22°	2220.7	2237.9	2280.0	2316.0	2314.8	2327.9	2336.1	2332.8	2324.2	2310.3	2274.3



44°	708.9	812.4	1053.7	1007.1	846.7	980.5	1174.8	1000.1	879.4	991.1	1061.9
44.5°	676.6	779.6	1012.0	970.7	810.3	944.1	1132.2	964.1	842.6	956.8	1020.2



66.5°	176.3	180.8	183.7	187.3	175.1	181.6	182.4	181.6	175.9	184.9	182.8
67°	171.4	175.9	179.2	182.8	171.0	177.1	177.9	177.1	171.4	180.0	178.3



89°	0.0	0.4	0.4	2.0	0.4	0.8	1.6	2.0	2.0	2.9	1.6
89.5°	0.0	0.4	0.4	0.4	0.0	0.0	0.4	0.4	0.4	1.2	0.4



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21.5°	2245.3	2245.7	2235.8	2234.2	2232.2	2236.3
22°	2230.5	2230.5	2220.7	2219.1	2217.0	2220.7



44°	826.3	751.4	845.9	977.2	827.1	708.9
44.5°	793.1	718.7	812.4	939.2	794.4	676.6



66.5°	181.2	182.4	186.9	184.5	184.1	176.3
67°	177.1	178.3	182.4	180.0	179.2	171.4

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89°	0.4	1.6	0.8	0.4	0.4	0.0
89.5°	0.0	0.4	0.4	0.4	0.4	0.0

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Peachtree City, GA 30269

Scaled Data Report



(END OF REPORT)