

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: P776341

Luminaire Tested: HCDJBL3040CSD-HCD61TRH-4000lm-3000K

Issue Date: 2/13/2024

Test Information

Test Method: LM-79-2019
Report Number: P776341
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (A2312156B036)
Test Lab:
Issue Date: 2/13/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: HALO COMMERCIAL
Catalog Number: HCDJBL3040CSD-HCD61TRH-4000lm-3000K
Description: 6 INCH ROUND SHALLOW-WIDE HAZE TRIM
Light Source: SELECTABLE LUMENS AND CCT ARRAY 90CRI / 3000K CCT
Ballast/Driver: -

Summary

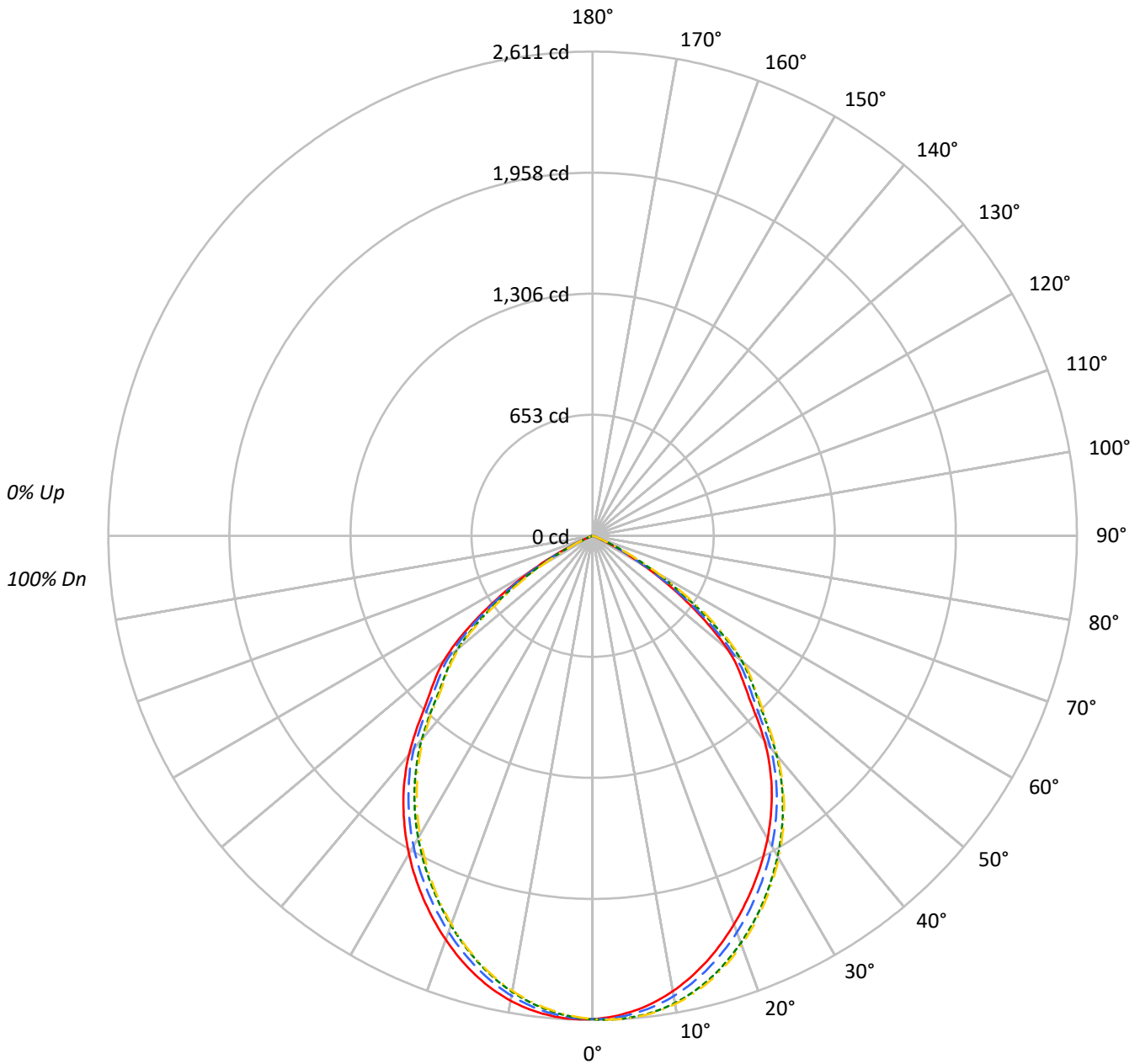
Lumens per Lamp: N/A
Luminaire Lumens: 4655.1 lumens
Efficiency: N/A
Efficacy: 120.9 lumens/watt
Spacing Criteria (0/90/45): 1.12 / 1.12 / 1.2
Luminous Opening: Circular (Dia: 0.5' x H: 0')
CIE Type: Direct

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



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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	112	108	105	103	109	106	103	101	102	100	98	98	97	95	95	93	92	90								
2	104	98	93	89	102	96	91	87	93	89	86	90	87	84	87	84	82	80								
3	97	89	82	77	95	87	81	76	84	79	75	82	77	74	79	76	73	71								
4	90	80	73	68	88	79	72	67	77	71	66	74	70	65	72	68	65	63								
5	84	73	65	60	82	72	65	60	70	64	59	68	63	58	66	62	58	56								
6	78	67	59	53	76	66	58	53	64	58	53	62	57	52	61	56	52	50								
7	73	61	53	48	71	60	53	48	59	52	48	57	52	47	56	51	47	45								
8	68	56	49	43	67	55	48	43	54	48	43	53	47	43	52	47	43	41								
9	64	52	45	40	63	51	44	39	50	44	39	49	43	39	48	43	39	37								
10	60	48	41	36	59	48	41	36	47	40	36	46	40	36	45	40	36	34								

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°	270°
0°	142894	142894	142894	142894
5°	141498	143286	142967	141586
10°	138797	142393	141720	139037
15°	134848	140024	139047	135182
20°	130071	136325	135164	130369
25°	124912	131687	130598	124985
30°	119398	126361	125399	119075
35°	112685	119679	119056	112056
40°	103100	110385	110214	102513
45°	90723	98336	98002	90087
50°	80697	89481	89148	81063
55°	59496	68882	69369	61102
60°	33999	42453	43483	36488
65°	9806	15942	15034	12751
70°	256	369	256	753
75°	169	169	169	169
80°	126	126	126	126
85°	252	0	0	252

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 135°
 Vertical Angle: 45°
 Luminance: 99282 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	244.9	5.3
10°-20°	680.3	14.6
20°-30°	973.3	20.9
30°-40°	1077.4	23.1
40°-50°	946.6	20.3
50°-60°	602.7	12.9
60°-70°	128.3	2.8
70°-80°	1.1	0.0
80°-90°	0.5	0.0
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°	1898.5	40.8
0°-40°	2975.9	63.9
0°-60°	4525.2	97.2
0°-90°	4655.1	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4655.1	100.0

CANDELA DISTRIBUTION:

	0°	90°	180°	270°	360°	Flux
0°	2607	2607	2607	2607	2607	
5°	2571	2604	2598	2573	2571	243
15°	2376	2467	2450	2382	2376	668
25°	2065	2177	2159	2066	2065	950
35°	1684	1788	1779	1674	1684	1048
45°	1170	1268	1264	1162	1170	910
55°	622	721	726	639	622	554
65°	76	123	116	98	76	101
75°	1	1	1	1	1	1
85°	0	0	0	0	0	0
90°	0	0	0	2	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°	2606.6	2606.6	2606.6	2606.6	2606.6	2606.6	2606.6	2606.6	2606.6	2606.6	2606.6
0.5°	2604.6	2605.8	2607.0	2606.6	2609.3	2608.9	2607.7	2607.4	2607.4	2607.4	2607.0
1°	2602.7	2604.2	2606.6	2606.6	2610.1	2610.1	2608.9	2608.5	2608.1	2607.4	2606.2
1.5°	2600.3	2602.7	2605.4	2606.6	2610.9	2611.3	2610.1	2609.3	2608.1	2607.0	2605.0
2°	2597.2	2600.3	2603.8	2605.8	2610.9	2611.7	2610.9	2609.7	2608.1	2605.8	2603.4
2.5°	2594.0	2597.6	2601.9	2604.6	2610.9	2612.1	2610.9	2609.7	2607.4	2604.6	2601.5
3°	2590.5	2594.4	2599.5	2603.4	2610.1	2611.7	2610.9	2608.9	2606.6	2603.0	2599.1
3.5°	2586.2	2590.9	2596.8	2601.5	2609.3	2610.9	2610.5	2608.1	2605.0	2600.7	2596.0
4°	2581.5	2587.0	2593.7	2599.1	2607.7	2610.1	2609.3	2607.0	2603.0	2598.3	2592.5
4.5°	2576.4	2582.7	2589.7	2596.0	2606.2	2608.9	2608.1	2605.4	2600.7	2595.2	2589.0
5°	2571.3	2577.6	2585.4	2592.9	2603.8	2607.0	2606.2	2603.0	2598.0	2591.7	2585.0
5.5°	2565.5	2572.1	2580.7	2589.3	2601.5	2604.6	2604.2	2600.7	2594.4	2587.8	2580.3
6°	2558.8	2566.2	2576.0	2585.4	2598.3	2602.3	2601.5	2597.6	2590.9	2583.1	2574.9
6.5°	2552.5	2560.0	2570.6	2580.7	2594.8	2599.1	2598.3	2594.0	2587.0	2578.4	2569.8
7°	2545.5	2553.3	2564.7	2575.6	2590.9	2595.6	2594.8	2590.1	2582.7	2573.3	2563.9
7.5°	2537.7	2546.3	2558.4	2570.2	2586.2	2591.7	2590.9	2585.8	2577.6	2567.4	2557.2
8°	2529.8	2538.5	2551.4	2564.3	2581.9	2587.4	2586.6	2580.7	2572.1	2561.5	2550.6
8.5°	2521.2	2530.6	2544.3	2558.4	2576.4	2582.7	2581.9	2575.6	2566.2	2554.9	2543.1
9°	2512.6	2522.0	2536.9	2551.4	2570.6	2577.2	2576.4	2569.8	2559.6	2547.8	2535.3
9.5°	2503.2	2513.4	2528.7	2544.3	2564.3	2571.7	2570.6	2563.9	2552.9	2540.4	2527.5
10°	2493.4	2503.6	2520.1	2536.9	2558.0	2565.5	2564.7	2557.2	2545.9	2532.6	2518.9
10.5°	2483.3	2493.8	2511.4	2528.7	2551.0	2558.8	2558.0	2550.2	2538.5	2524.4	2509.9
11°	2472.7	2484.0	2502.0	2520.1	2543.5	2551.8	2551.0	2542.4	2529.8	2515.7	2500.5
11.5°	2461.7	2473.5	2492.3	2511.0	2535.3	2543.9	2543.1	2534.5	2521.2	2506.3	2490.7
12°	2450.8	2462.5	2482.5	2501.7	2527.1	2536.1	2535.3	2525.9	2512.6	2496.6	2480.5
12.5°	2439.0	2451.5	2471.9	2492.3	2518.1	2527.5	2526.7	2517.3	2503.2	2486.8	2469.9
13°	2426.9	2440.2	2460.9	2482.1	2508.7	2518.9	2517.7	2507.9	2493.0	2476.2	2459.0
13.5°	2414.7	2428.0	2449.6	2471.5	2498.9	2509.5	2508.3	2498.1	2483.3	2465.6	2448.0
14°	2402.2	2415.9	2438.2	2460.2	2488.7	2499.7	2498.5	2487.9	2472.3	2454.3	2436.3
14.5°	2389.3	2403.0	2426.1	2449.6	2478.2	2489.1	2487.9	2477.4	2460.9	2442.9	2423.7
15°	2376.0	2390.1	2414.0	2437.4	2467.2	2478.6	2477.4	2466.0	2450.0	2430.8	2411.6
15.5°	2362.7	2377.2	2401.0	2425.7	2455.8	2467.2	2466.0	2454.7	2438.2	2418.7	2399.1
16°	2348.6	2363.5	2388.1	2412.4	2444.1	2456.2	2454.3	2442.9	2425.3	2406.1	2385.8
16.5°	2334.9	2349.8	2375.2	2400.6	2431.6	2444.1	2442.1	2430.8	2413.2	2393.2	2372.5
17°	2320.0	2335.7	2361.5	2387.3	2419.0	2432.0	2430.0	2418.3	2400.3	2380.3	2359.1
17.5°	2305.5	2321.6	2347.4	2373.6	2406.1	2418.7	2417.5	2405.0	2387.3	2366.6	2345.4
18°	2290.6	2307.1	2333.7	2359.5	2392.8	2405.7	2403.8	2391.6	2373.6	2352.9	2330.6
18.5°	2275.8	2292.2	2319.2	2346.2	2379.1	2392.0	2390.5	2378.3	2359.5	2338.8	2316.9
19°	2260.5	2277.7	2304.7	2331.7	2365.0	2378.3	2376.8	2364.2	2345.8	2324.7	2302.0
19.5°	2245.6	2262.8	2289.9	2317.6	2350.9	2364.2	2362.7	2350.5	2331.4	2310.2	2287.5
20°	2229.6	2247.2	2274.6	2302.4	2336.8	2349.8	2348.2	2336.0	2316.9	2295.3	2272.2
20.5°	2213.9	2231.5	2259.3	2287.1	2321.6	2335.3	2333.7	2321.2	2302.4	2280.5	2257.4
21°	2197.9	2216.3	2244.0	2272.2	2306.7	2320.0	2318.4	2306.3	2287.1	2265.2	2241.3

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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°	2148.9	2168.1	2196.3	2224.5	2259.7	2273.0	2271.8	2259.3	2240.9	2218.2	2193.9
23°	2132.9	2152.0	2179.8	2208.4	2243.3	2257.0	2255.8	2243.7	2224.9	2202.2	2177.1
23.5°	2116.0	2135.6	2163.4	2192.0	2227.2	2240.9	2239.3	2227.6	2208.4	2186.1	2161.1
24°	2099.2	2118.8	2146.2	2175.1	2211.2	2224.5	2223.3	2210.8	2192.4	2169.7	2144.2
24.5°	2082.4	2101.9	2129.7	2158.7	2194.3	2206.9	2206.5	2193.9	2175.5	2152.4	2127.8
25°	2065.1	2085.1	2112.5	2141.1	2177.1	2190.0	2189.2	2177.1	2159.1	2136.0	2110.5
25.5°	2048.3	2068.3	2095.7	2124.2	2159.9	2172.8	2172.0	2160.3	2142.3	2118.8	2093.7
26°	2030.7	2051.4	2078.4	2107.0	2142.6	2154.8	2154.4	2143.4	2125.0	2101.5	2076.1
26.5°	2013.1	2033.8	2060.4	2089.4	2125.0	2137.6	2137.2	2125.8	2107.4	2083.9	2058.9
27°	1995.8	2016.6	2042.8	2071.8	2107.4	2119.2	2119.6	2107.4	2090.2	2066.3	2041.3
27.5°	1977.8	1999.0	2025.2	2053.0	2089.0	2101.2	2101.5	2089.8	2072.6	2048.7	2023.2
28°	1959.8	1981.0	2006.8	2035.0	2071.0	2083.5	2082.8	2072.2	2054.6	2030.7	2004.8
28.5°	1941.4	1962.6	1988.4	2016.2	2052.2	2064.0	2064.0	2053.8	2036.6	2012.3	1987.2
29°	1923.0	1944.9	1970.0	1997.8	2033.8	2045.2	2045.6	2034.6	2018.2	1993.9	1968.8
29.5°	1904.6	1926.2	1951.6	1978.6	2015.0	2026.0	2026.8	2015.8	1999.8	1975.5	1950.4
30°	1886.2	1907.8	1932.8	1959.8	1996.2	2007.6	2007.2	1997.4	1981.0	1956.7	1931.2
30.5°	1866.6	1889.0	1913.6	1941.0	1975.9	1987.2	1987.2	1978.2	1961.4	1937.5	1912.1
31°	1847.1	1869.8	1894.4	1921.1	1956.7	1967.3	1968.0	1957.9	1942.6	1918.7	1893.3
31.5°	1827.9	1850.6	1874.5	1901.1	1936.3	1947.3	1947.7	1938.7	1922.6	1899.1	1874.1
32°	1808.3	1831.4	1854.9	1881.1	1916.4	1927.7	1927.3	1918.7	1903.4	1879.2	1854.5
32.5°	1788.3	1811.1	1834.9	1861.2	1896.0	1906.6	1906.2	1898.7	1883.5	1859.6	1834.2
33°	1768.0	1791.1	1814.6	1840.8	1875.3	1885.4	1886.2	1878.0	1863.1	1839.6	1814.2
33.5°	1747.6	1770.3	1794.2	1819.7	1853.7	1864.3	1864.7	1857.3	1842.0	1819.7	1794.2
34°	1726.5	1750.0	1773.5	1799.3	1832.6	1843.5	1843.2	1836.1	1821.2	1798.5	1773.5
34.5°	1705.4	1729.2	1752.3	1777.0	1811.1	1820.4	1821.2	1814.2	1800.1	1777.4	1752.7
35°	1683.8	1707.7	1731.2	1755.5	1788.3	1798.9	1799.3	1792.3	1779.0	1756.6	1731.2
35.5°	1661.5	1686.2	1709.7	1733.1	1766.4	1775.8	1776.6	1770.3	1756.6	1735.5	1709.7
36°	1639.2	1664.6	1687.3	1710.8	1743.7	1753.5	1753.9	1748.0	1735.1	1714.0	1688.9
36.5°	1616.1	1641.5	1665.0	1687.7	1721.0	1729.2	1730.8	1724.5	1712.4	1691.3	1667.0
37°	1593.4	1618.4	1642.3	1664.6	1696.3	1705.7	1706.5	1701.0	1690.1	1668.9	1644.3
37.5°	1569.9	1594.6	1618.8	1641.1	1672.5	1680.7	1681.9	1677.2	1666.2	1646.6	1621.6
38°	1545.2	1571.1	1594.9	1616.1	1647.8	1656.0	1657.6	1652.5	1641.9	1623.1	1599.6
38.5°	1520.6	1546.4	1570.3	1591.0	1622.4	1631.0	1632.5	1627.1	1618.0	1599.3	1575.0
39°	1494.7	1521.3	1544.8	1566.0	1596.5	1604.3	1606.3	1601.6	1593.4	1575.0	1550.3
39.5°	1468.1	1493.6	1517.8	1538.6	1569.5	1577.7	1579.7	1575.4	1567.5	1549.1	1524.1
40°	1440.7	1466.1	1489.6	1510.8	1542.5	1550.7	1552.3	1548.8	1540.1	1522.9	1499.4
40.5°	1410.9	1437.2	1461.1	1482.2	1513.5	1522.1	1524.9	1521.0	1512.7	1495.5	1470.8
41°	1382.4	1408.2	1432.1	1453.6	1485.3	1493.9	1495.9	1492.4	1484.9	1466.9	1442.3
41.5°	1354.2	1379.2	1403.1	1425.0	1457.1	1465.4	1468.1	1463.8	1456.0	1437.6	1413.3
42°	1325.6	1350.3	1374.1	1396.1	1428.6	1438.4	1440.7	1436.8	1428.2	1410.2	1386.7
42.5°	1294.3	1319.7	1344.0	1366.3	1400.0	1409.4	1412.5	1409.0	1400.0	1382.0	1357.3
43°	1266.1	1291.1	1315.8	1337.7	1370.6	1380.4	1383.5	1379.2	1370.6	1351.8	1328.3
43.5°	1239.9	1264.5	1289.2	1311.1	1343.2	1353.0	1355.7	1350.7	1340.5	1321.7	1298.2



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
45°	1170.2	1194.4	1217.9	1238.7	1268.4	1277.8	1280.6	1275.1	1264.1	1245.0	1222.6
45.5°	1148.3	1172.9	1196.4	1216.8	1245.7	1254.7	1257.5	1252.0	1241.0	1222.6	1199.9
46°	1127.9	1152.6	1175.3	1195.6	1223.8	1232.4	1235.2	1229.7	1219.1	1200.7	1178.4
46.5°	1107.5	1132.2	1154.5	1174.5	1202.3	1211.3	1214.0	1208.9	1198.0	1179.6	1157.3
47°	1087.6	1111.8	1134.6	1154.1	1181.1	1190.1	1192.9	1187.8	1176.8	1159.2	1137.3
47.5°	1067.6	1091.9	1114.2	1133.8	1160.4	1169.8	1172.5	1166.7	1156.1	1138.9	1116.9
48°	1047.2	1071.5	1093.1	1113.4	1139.6	1149.4	1151.8	1146.3	1136.1	1118.9	1097.0
48.5°	1024.5	1048.4	1071.1	1091.9	1119.3	1129.1	1131.8	1126.7	1115.8	1098.5	1077.0
49°	999.9	1022.2	1045.3	1068.0	1097.0	1107.5	1111.1	1105.6	1093.8	1075.8	1055.1
49.5°	974.8	996.0	1019.5	1042.9	1073.5	1084.8	1088.0	1081.7	1070.0	1051.2	1030.0
50°	946.2	966.6	990.1	1015.5	1049.2	1061.7	1064.9	1058.2	1045.3	1026.5	1005.4
50.5°	916.1	936.8	961.1	987.3	1022.6	1035.5	1038.2	1033.5	1019.5	1000.7	978.0
51°	885.2	906.7	929.4	956.8	994.0	1005.7	1010.1	1005.4	992.0	972.1	949.8
51.5°	853.8	875.0	898.1	924.7	963.9	976.4	981.9	975.2	963.5	942.7	920.4
52°	821.7	842.5	865.2	891.0	931.0	945.9	951.3	945.1	932.5	912.2	890.3
52.5°	789.3	809.6	833.1	857.0	897.3	914.5	920.0	913.7	899.7	880.1	859.3
53°	756.0	776.3	798.3	821.4	862.5	882.0	889.1	880.9	864.8	846.4	828.0
53.5°	722.7	742.3	764.6	785.7	827.2	849.5	857.8	848.8	830.8	813.5	795.1
54°	689.0	708.2	729.0	749.3	791.6	815.1	824.9	813.5	795.9	779.1	761.8
54.5°	655.8	675.7	693.7	713.7	756.4	781.0	790.8	779.1	760.3	744.6	728.2
55°	622.5	641.3	657.7	677.7	720.7	747.8	757.9	745.4	725.8	710.2	695.3
55.5°	588.8	607.2	622.9	642.1	686.3	712.5	724.7	711.0	692.2	674.9	660.8
56°	555.9	572.8	587.6	605.6	650.7	677.3	689.4	674.9	657.3	639.3	626.8
56.5°	523.4	539.9	552.0	570.8	615.8	643.2	655.0	640.9	623.3	604.5	592.7
57°	491.3	505.8	516.8	536.0	581.0	607.2	620.1	606.8	589.2	570.4	559.4
57.5°	459.2	472.9	483.1	502.7	548.1	573.1	586.1	573.5	556.7	536.3	525.0
58°	427.9	440.0	450.2	469.0	514.8	538.3	550.8	539.5	523.4	502.3	492.1
58.5°	397.4	408.3	417.3	437.3	482.7	505.0	516.4	507.0	492.1	470.2	460.0
59°	367.2	376.2	385.2	405.6	450.2	471.4	481.9	473.7	459.6	438.5	427.5
59.5°	339.0	346.1	354.7	374.3	418.5	438.9	447.9	442.8	427.5	407.9	396.6
60°	310.1	315.2	324.5	344.5	387.2	406.4	415.0	409.9	396.6	379.4	367.2
60.5°	282.3	286.6	295.6	315.5	357.8	376.2	384.1	380.1	367.6	350.8	338.3
61°	255.6	258.4	267.0	286.2	328.9	346.1	353.1	350.8	338.6	322.2	309.3
61.5°	229.8	232.2	240.4	260.7	299.5	315.9	322.2	321.0	309.7	293.6	280.3
62°	204.4	205.9	215.3	234.1	270.1	285.8	291.3	291.3	280.7	265.0	251.3
62.5°	180.9	181.7	190.7	209.1	242.7	255.6	260.3	261.5	251.7	239.2	225.9
63°	157.8	158.2	168.0	185.6	216.5	228.2	232.5	234.1	222.0	214.5	201.2
63.5°	134.3	137.0	145.6	162.9	191.0	201.2	205.9	207.1	194.2	190.7	178.1
64°	114.7	119.8	128.4	140.9	167.2	176.6	180.9	182.0	167.2	167.6	156.2
64.5°	95.1	103.0	111.2	123.3	144.1	152.7	157.0	157.4	140.9	146.0	135.5
65°	75.6	86.5	94.0	105.7	122.9	130.0	134.7	134.7	115.9	124.9	116.3
65.5°	56.0	69.7	76.7	88.1	102.6	109.2	113.5	112.8	93.6	105.7	99.0
66°	41.1	52.9	59.5	70.5	83.8	89.7	94.0	92.4	72.8	87.3	81.8



TEST NUMBER: P776341

CATALOG NUMBER: HCDJBL3040CSD-HCD61TRH-4000lm-3000K

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
67.5°	12.9	22.3	25.8	28.6	43.8	47.4	50.9	49.7	33.3	48.5	45.8
68°	10.2	15.3	18.0	19.2	32.5	35.2	38.0	37.6	20.0	37.2	35.6
68.5°	7.4	11.7	11.0	12.1	20.7	23.1	25.4	25.4	6.7	25.8	25.1
69°	4.7	8.6	8.6	9.4	9.4	11.4	12.9	13.3	3.1	14.9	14.9
69.5°	2.0	5.1	6.3	6.7	4.7	5.9	6.7	7.4	2.0	9.0	8.6
70°	1.6	2.0	3.9	3.9	2.3	2.7	3.1	3.5	1.6	4.7	4.7
70.5°	1.6	1.6	1.6	1.6	1.6	1.6	1.6	2.0	1.6	2.3	2.3
71°	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6
71.5°	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.6	1.6	1.6
72°	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.6	1.6
72.5°	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2
73°	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2
73.5°	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2
74°	0.8	0.8	1.2	0.8	0.8	0.8	0.8	0.8	0.8	1.2	1.2
74.5°	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	1.2
75°	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8
75.5°	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8
76°	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8
76.5°	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8
77°	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8
77.5°	0.8	0.8	0.8	0.8	0.4	0.4	0.4	0.4	0.4	0.8	0.8
78°	0.8	0.4	0.8	0.4	0.4	0.4	0.4	0.4	0.4	0.8	0.8
78.5°	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
79°	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
79.5°	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
80°	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
80.5°	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
81°	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
81.5°	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
82°	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
82.5°	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
83°	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
83.5°	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
84°	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.0	0.0	0.4	0.4
84.5°	0.4	0.4	0.4	0.4	0.4	0.0	0.0	0.0	0.0	0.4	0.4
85°	0.4	0.4	0.4	0.4	0.0	0.0	0.0	0.0	0.0	0.4	0.4
85.5°	0.4	0.4	0.4	0.4	0.0	0.0	0.0	0.0	0.0	0.4	0.4
86°	0.4	0.4	0.4	0.4	0.0	0.0	0.0	0.0	0.0	0.4	0.4
86.5°	0.4	0.4	0.4	0.4	0.0	0.0	0.0	0.0	0.0	0.4	0.4
87°	0.4	0.4	0.4	0.4	0.0	0.0	0.0	0.0	0.0	0.4	0.4
87.5°	0.4	0.4	0.4	0.4	0.0	0.0	0.0	0.0	0.0	0.4	0.4
88°	0.4	0.8	0.8	0.4	0.0	0.0	0.0	0.0	0.0	0.4	0.4
88.5°	0.4	0.8	0.8	0.8	0.0	0.0	0.0	0.0	0.0	0.4	0.4



TEST NUMBER: P776341

CATALOG NUMBER: HCDJBL3040CSD-HCD61TRH-4000lm-3000K

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
90°	0.4	1.2	1.2	0.8	0.4	0.0	0.0	0.4	0.0	0.8	0.4



TEST NUMBER: P776341

CATALOG NUMBER: HCDJBL3040CSD-HCD61TRH-4000lm-3000K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
0°	2606.6	2606.6	2606.6	2606.6	2606.6	2606.6
0.5°	2605.0	2606.2	2605.0	2603.4	2603.8	2604.6
1°	2603.8	2604.2	2602.7	2601.1	2601.5	2602.7
1.5°	2601.9	2601.5	2599.5	2598.0	2598.3	2600.3
2°	2599.9	2598.7	2596.4	2594.8	2595.6	2597.2
2.5°	2597.2	2595.2	2592.9	2590.9	2591.7	2594.0
3°	2594.0	2591.7	2589.0	2587.0	2587.8	2590.5
3.5°	2590.9	2587.4	2584.6	2582.7	2583.5	2586.2
4°	2587.0	2583.1	2579.9	2578.0	2578.8	2581.5
4.5°	2582.7	2578.0	2574.9	2572.5	2573.7	2576.4
5°	2578.0	2572.9	2569.8	2567.4	2568.2	2571.3
5.5°	2572.9	2567.0	2563.9	2561.2	2561.9	2565.5
6°	2567.4	2561.2	2557.6	2555.3	2555.7	2558.8
6.5°	2561.2	2554.9	2551.4	2548.6	2548.6	2552.5
7°	2554.9	2547.8	2544.3	2541.6	2542.0	2545.5
7.5°	2548.2	2540.4	2536.9	2534.1	2534.5	2537.7
8°	2540.8	2533.0	2529.1	2526.3	2526.3	2529.8
8.5°	2533.0	2524.7	2521.2	2518.1	2518.1	2521.2
9°	2524.7	2516.1	2512.6	2509.9	2509.1	2512.6
9.5°	2516.1	2507.1	2503.6	2500.9	2500.1	2503.2
10°	2507.1	2497.7	2494.2	2491.5	2490.3	2493.4
10.5°	2497.7	2487.9	2484.4	2481.7	2480.5	2483.3
11°	2487.6	2477.8	2474.2	2471.5	2469.9	2472.7
11.5°	2477.4	2466.8	2463.7	2460.9	2459.4	2461.7
12°	2467.2	2456.2	2452.7	2450.0	2448.0	2450.8
12.5°	2455.8	2444.5	2441.4	2438.6	2436.7	2439.0
13°	2444.5	2432.7	2430.0	2427.3	2424.5	2426.9
13.5°	2432.4	2420.2	2417.9	2414.7	2412.4	2414.7
14°	2420.2	2407.7	2405.3	2402.2	2399.9	2402.2
14.5°	2408.1	2395.2	2392.8	2389.7	2386.9	2389.3
15°	2394.8	2381.9	2379.5	2376.4	2373.2	2376.0
15.5°	2381.5	2368.5	2365.8	2363.1	2359.9	2362.7
16°	2368.2	2354.4	2351.7	2349.0	2346.2	2348.6
16.5°	2354.4	2340.4	2338.0	2335.3	2331.7	2334.9
17°	2340.7	2326.3	2323.5	2320.8	2317.6	2320.0
17.5°	2326.7	2311.4	2308.6	2305.9	2302.4	2305.5
18°	2311.8	2296.5	2293.8	2291.0	2287.5	2290.6
18.5°	2296.9	2281.2	2278.1	2275.8	2272.2	2275.8
19°	2281.6	2266.0	2262.8	2260.1	2257.0	2260.5
19.5°	2266.8	2250.7	2247.2	2244.4	2241.3	2245.6
20°	2251.5	2234.7	2230.7	2228.0	2225.3	2229.6
20.5°	2235.8	2218.6	2214.7	2211.9	2209.2	2213.9
21°	2220.2	2201.8	2198.2	2195.1	2192.8	2197.9



TEST NUMBER: P776341

CATALOG NUMBER: HCDJBL3040CSD-HCD61TRH-4000lm-3000K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
22.5°	2171.6	2152.4	2147.3	2144.2	2143.0	2148.9
23°	2155.2	2135.2	2130.1	2125.8	2126.2	2132.9
23.5°	2138.7	2118.0	2112.5	2109.0	2109.0	2116.0
24°	2121.9	2100.8	2094.5	2090.6	2091.8	2099.2
24.5°	2104.7	2083.5	2076.9	2073.0	2073.7	2082.4
25°	2087.8	2066.3	2058.5	2054.2	2056.1	2065.1
25.5°	2070.6	2048.7	2040.5	2036.6	2038.9	2048.3
26°	2053.0	2030.7	2021.7	2017.0	2020.9	2030.7
26.5°	2035.4	2012.3	2003.7	1999.0	2002.9	2013.1
27°	2017.8	1994.3	1984.5	1979.8	1984.5	1995.8
27.5°	2000.1	1975.9	1965.7	1960.6	1965.7	1977.8
28°	1982.1	1957.1	1946.5	1941.4	1946.9	1959.8
28.5°	1963.7	1938.3	1927.3	1921.8	1928.1	1941.4
29°	1945.3	1919.5	1907.8	1901.9	1909.3	1923.0
29.5°	1926.9	1900.3	1888.2	1882.3	1889.7	1904.6
30°	1908.1	1881.1	1867.8	1862.7	1870.2	1886.2
30.5°	1889.0	1861.6	1847.9	1842.4	1850.6	1866.6
31°	1870.2	1841.6	1827.5	1821.6	1830.6	1847.1
31.5°	1850.2	1821.6	1807.1	1801.3	1810.3	1827.9
32°	1830.2	1801.7	1786.0	1780.5	1790.3	1808.3
32.5°	1810.7	1781.3	1765.2	1759.8	1769.6	1788.3
33°	1790.3	1760.2	1744.5	1739.0	1748.8	1768.0
33.5°	1769.9	1739.0	1723.4	1717.5	1728.1	1747.6
34°	1748.8	1717.9	1702.2	1696.0	1706.9	1726.5
34.5°	1727.7	1696.3	1679.9	1674.4	1685.4	1705.4
35°	1706.5	1674.4	1658.0	1652.5	1663.5	1683.8
35.5°	1685.0	1652.1	1636.4	1630.6	1641.5	1661.5
36°	1663.5	1629.4	1613.7	1608.3	1619.2	1639.2
36.5°	1640.8	1606.7	1591.4	1585.6	1596.9	1616.1
37°	1617.7	1583.2	1567.9	1562.8	1573.8	1593.4
37.5°	1594.6	1559.3	1544.4	1539.7	1550.3	1569.9
38°	1570.7	1535.4	1521.0	1515.9	1526.4	1545.2
38.5°	1546.4	1510.4	1496.3	1491.6	1501.8	1520.6
39°	1521.0	1485.3	1472.0	1467.3	1477.5	1494.7
39.5°	1495.9	1459.1	1445.8	1441.9	1450.5	1468.1
40°	1469.7	1432.5	1418.8	1414.9	1423.1	1440.7
40.5°	1441.9	1404.7	1391.0	1387.1	1394.5	1410.9
41°	1413.3	1376.1	1362.8	1358.5	1366.7	1382.4
41.5°	1384.7	1347.5	1334.2	1330.7	1337.7	1354.2
42°	1357.3	1320.5	1306.8	1302.5	1310.3	1325.6
42.5°	1329.1	1292.3	1278.2	1272.7	1280.2	1294.3
43°	1300.5	1263.0	1249.3	1245.0	1251.6	1266.1
43.5°	1271.2	1234.4	1221.1	1216.8	1224.2	1239.9

TEST NUMBER: P776341

CATALOG NUMBER: HCDJBL3040CSD-HCD61TRH-4000lm-3000K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
45°	1195.6	1162.0	1149.4	1145.9	1153.7	1170.2
45.5°	1173.3	1139.6	1127.1	1124.4	1132.2	1148.3
46°	1152.2	1118.9	1106.8	1103.6	1111.8	1127.9
46.5°	1131.0	1098.9	1086.4	1083.7	1091.5	1107.5
47°	1111.8	1079.4	1066.4	1063.7	1071.5	1087.6
47.5°	1091.5	1058.6	1046.9	1043.7	1051.9	1067.6
48°	1071.9	1039.8	1027.3	1024.1	1032.0	1047.2
48.5°	1052.3	1019.1	1007.7	1003.8	1011.2	1024.5
49°	1030.8	998.3	986.2	981.9	988.1	999.9
49.5°	1006.9	974.0	963.9	959.2	963.5	974.8
50°	982.3	950.5	939.6	934.9	937.2	946.2
50.5°	955.6	923.1	913.7	907.5	908.3	916.1
51°	926.7	895.0	884.8	878.1	878.5	885.2
51.5°	897.7	864.4	854.6	846.4	848.0	853.8
52°	868.3	833.9	822.5	813.9	814.7	821.7
52.5°	837.4	801.4	789.6	781.0	781.4	789.3
53°	806.1	769.3	756.4	747.0	747.8	756.0
53.5°	773.6	736.4	722.3	712.9	713.7	722.7
54°	741.5	703.9	688.6	678.9	679.6	689.0
54.5°	709.0	671.8	655.4	644.8	645.6	655.8
55°	677.3	639.3	621.3	610.3	611.9	622.5
55.5°	644.4	606.0	588.4	575.5	579.0	588.8
56°	611.1	573.9	555.1	541.8	546.1	555.9
56.5°	579.0	542.2	523.0	508.9	514.0	523.4
57°	545.7	510.9	490.2	476.1	481.5	491.3
57.5°	514.0	480.0	458.8	444.3	449.8	459.2
58°	482.3	449.4	428.3	413.8	418.9	427.9
58.5°	450.2	418.9	398.5	383.3	389.5	397.4
59°	418.9	389.5	369.6	354.3	359.0	367.2
59.5°	389.5	361.0	340.6	326.1	331.2	339.0
60°	360.6	332.8	312.8	298.7	303.8	310.1
60.5°	331.6	304.2	286.2	272.9	276.8	282.3
61°	302.6	277.6	260.0	248.2	250.2	255.6
61.5°	273.7	251.3	235.7	225.1	226.7	229.8
62°	246.6	225.5	211.8	201.6	202.8	204.4
62.5°	220.8	200.8	189.1	180.5	179.7	180.9
63°	195.7	177.3	167.6	159.7	157.8	157.8
63.5°	171.9	155.0	147.6	140.9	138.2	134.3
64°	149.2	133.5	130.8	125.3	122.1	114.7
64.5°	128.8	115.9	114.3	109.2	106.1	95.1
65°	108.8	98.3	97.9	93.6	89.7	75.6
65.5°	90.8	81.0	81.0	77.9	73.6	56.0
66°	74.4	63.4	64.6	62.2	57.2	41.1



TEST NUMBER: P776341

CATALOG NUMBER: HCDJBL3040CSD-HCD61TRH-4000lm-3000K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
67.5°	40.7	28.6	30.1	29.8	24.7	12.9
68°	31.3	20.4	21.9	21.1	17.2	10.2
68.5°	21.9	14.1	14.5	14.1	14.1	7.4
69°	12.5	11.0	11.4	11.0	11.0	4.7
69.5°	7.4	7.8	8.2	7.8	7.8	2.0
70°	3.9	4.7	4.7	4.7	4.7	1.6
70.5°	2.0	1.6	1.6	1.6	1.6	1.6
71°	1.6	1.6	1.6	1.6	1.6	1.6
71.5°	1.6	1.2	1.2	1.2	1.2	1.2
72°	1.2	1.2	1.2	1.2	1.2	1.2
72.5°	1.2	1.2	1.2	1.2	1.2	1.2
73°	1.2	1.2	1.2	1.2	1.2	1.2
73.5°	1.2	1.2	1.2	1.2	1.2	1.2
74°	1.2	1.2	1.2	1.2	0.8	0.8
74.5°	0.8	0.8	0.8	0.8	0.8	0.8
75°	0.8	0.8	0.8	0.8	0.8	0.8
75.5°	0.8	0.8	0.8	0.8	0.8	0.8
76°	0.8	0.8	0.8	0.8	0.8	0.8
76.5°	0.8	0.8	0.8	0.8	0.8	0.8
77°	0.8	0.8	0.8	0.8	0.8	0.8
77.5°	0.8	0.8	0.8	0.8	0.8	0.8
78°	0.8	0.8	0.8	0.8	0.8	0.8
78.5°	0.4	0.8	0.8	0.8	0.8	0.4
79°	0.4	0.4	0.8	0.8	0.8	0.4
79.5°	0.4	0.4	0.8	0.8	0.4	0.4
80°	0.4	0.4	0.8	0.8	0.4	0.4
80.5°	0.4	0.4	0.8	0.8	0.4	0.4
81°	0.4	0.4	0.8	0.8	0.4	0.4
81.5°	0.4	0.4	0.8	0.8	0.4	0.4
82°	0.4	0.4	0.8	0.8	0.4	0.4
82.5°	0.4	0.4	0.8	0.8	0.4	0.4
83°	0.4	0.4	0.8	0.8	0.4	0.4
83.5°	0.4	0.4	0.8	0.8	0.4	0.4
84°	0.4	0.4	0.8	0.8	0.4	0.4
84.5°	0.4	0.4	0.8	0.8	0.4	0.4
85°	0.4	0.4	0.8	0.8	0.8	0.4
85.5°	0.4	0.4	0.8	0.8	0.8	0.4
86°	0.4	0.4	0.8	0.8	0.8	0.4
86.5°	0.4	0.4	0.8	1.2	0.8	0.4
87°	0.4	0.4	1.2	1.2	1.2	0.4
87.5°	0.4	0.8	1.2	1.6	1.2	0.4
88°	0.4	0.8	1.6	2.0	1.6	0.4
88.5°	0.4	0.8	2.0	2.3	2.0	0.4



TEST NUMBER: P776341

CATALOG NUMBER: HCDJBL3040CSD-HCD61TRH-4000lm-3000K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
90°	0.4	1.6	2.7	2.0	2.7	0.4



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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°	2181.8	2200.2	2228.0	2256.2	2291.4	2304.3	2302.8	2290.6	2271.5	2249.9	2225.6
22°	2165.4	2184.1	2211.9	2240.9	2275.8	2289.1	2287.5	2275.0	2256.2	2234.3	2209.6



44°	1215.2	1240.3	1264.1	1286.1	1317.4	1327.2	1329.5	1324.0	1313.1	1293.9	1271.6
44.5°	1192.1	1216.8	1240.6	1261.8	1292.3	1301.7	1304.1	1299.4	1288.0	1268.8	1245.3



66.5°	29.8	40.7	46.6	52.9	66.9	71.6	75.9	74.0	59.5	70.9	66.9
67°	20.4	30.5	35.6	39.9	55.6	59.5	63.4	61.9	46.2	59.5	56.4



89°	0.4	0.8	1.2	0.8	0.0	0.0	0.0	0.4	0.0	0.4	0.4
89.5°	0.4	1.2	1.2	0.8	0.4	0.0	0.0	0.4	0.0	0.4	0.4

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21.5°	2204.5	2185.3	2181.4	2178.3	2176.7	2181.8
22°	2187.7	2168.9	2164.6	2160.7	2159.5	2165.4



44°	1244.2	1208.9	1196.4	1191.7	1199.9	1215.2
44.5°	1219.1	1185.1	1172.1	1168.6	1176.4	1192.1



66.5°	59.9	49.7	52.1	50.1	45.0	29.8
67°	50.1	38.0	40.3	39.1	34.1	20.4



89°	0.4	1.2	2.0	2.7	2.0	0.4
89.5°	0.4	1.2	2.3	2.7	2.3	0.4

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Peachtree City, GA 30269

Scaled Data Report



(END OF REPORT)