

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: P776249

Luminaire Tested: HCDJBL3040CSD-HCD41TRH-HCD41TRLWW-4000lm-5000K

Issue Date: 2/13/2024

**Test Information**

Test Method: LM-79-2019  
Report Number: P776249  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA ( A2312156B034)  
Test Lab:  
Issue Date: 2/13/2024  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: HALO COMMERCIAL  
Catalog Number: HCDJBS3040CSD-HCD41TRH-HCD41TRLWW-4000lm-5000K  
Description: 4 INCH ROUND SHALLOW-WIDE LENSED WALLWASH KIT  
Light Source: SELECTABLE LUMENS AND CCT ARRAY 90CRI / 5000K CCT  
Ballast/Driver: -

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 4895.9 lumens  
Efficiency: N/A  
Efficacy: 127.2 lumens/watt  
Spacing Criteria (0/90/45): 1.16 / 1.14 / 1.22  
Luminous Opening: Circular (Dia: 0.33' x H: 0')  
CIE Type: Direct

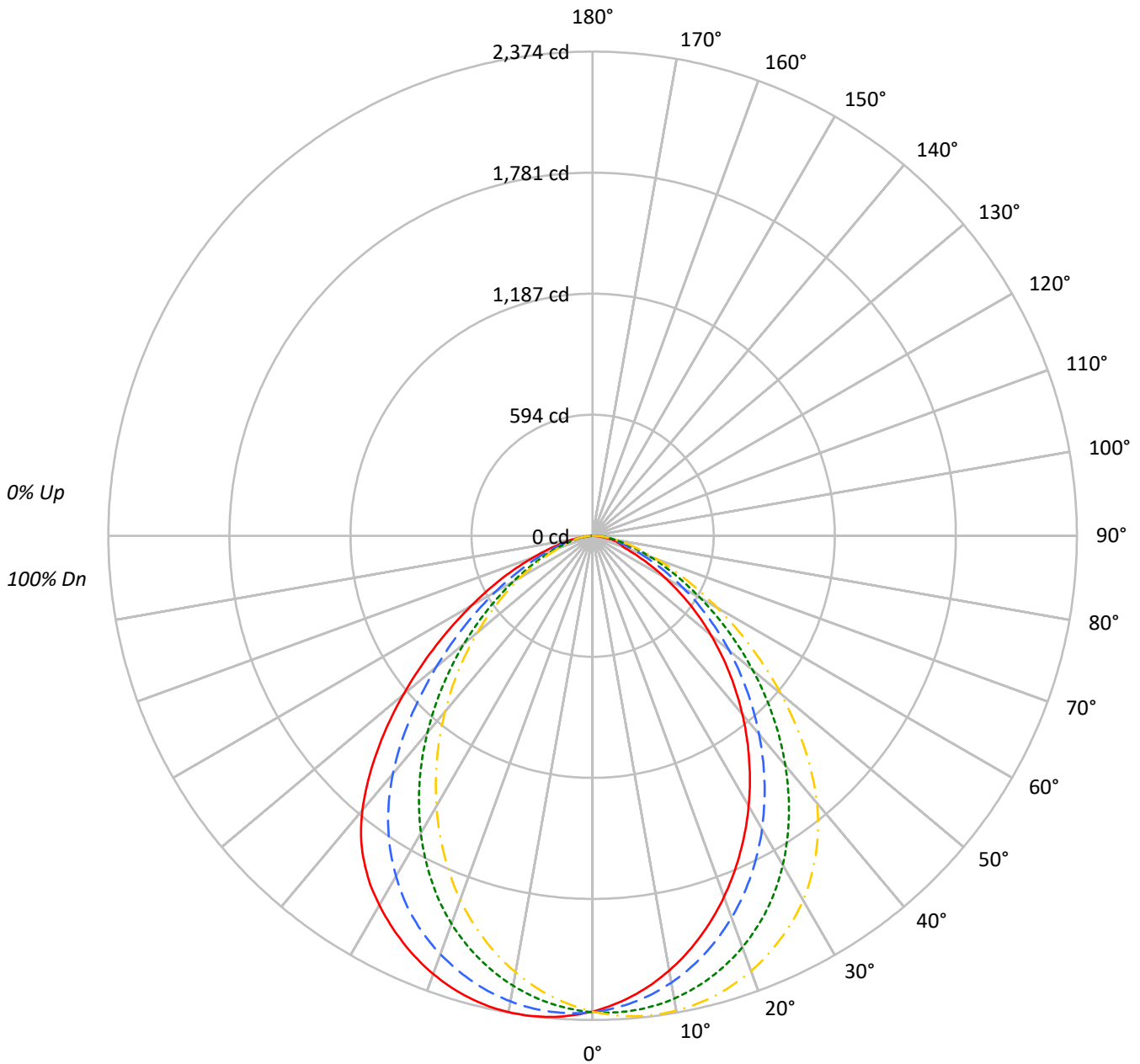
Input Watts (W): 38.5  
Input Voltage (V): NR  
Input Current (A<sub>in</sub>): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 24 FT



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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									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																			
1	110	106	103	99	108	104	101	98	100	97	95	96	94	92	93	91	89	87																			
2	102	95	89	84	99	93	87	83	89	85	81	86	82	79	83	80	77	75																			
3	94	84	77	71	91	83	76	71	80	74	70	77	72	68	75	71	67	65																			
4	87	76	68	62	84	74	67	61	72	66	61	70	64	60	68	63	59	57																			
5	80	68	60	54	78	67	60	54	65	59	53	63	57	53	62	56	52	50																			
6	74	62	54	48	73	61	53	48	59	53	47	58	52	47	56	51	47	45																			
7	69	57	49	43	68	56	48	43	54	48	42	53	47	42	52	46	42	40																			
8	65	52	44	39	63	51	44	39	50	43	38	49	43	38	48	42	38	36																			
9	61	48	40	35	59	47	40	35	46	40	35	45	39	35	44	39	35	33																			
10	57	45	37	32	56	44	37	32	43	36	32	42	36	32	41	36	32	30																			

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

	0°	90°	180°	270°
0°	293696	293696	293696	293696
5°	286025	295070	299151	290990
10°	276630	294457	303082	286303
15°	265295	291952	305437	279744
20°	252318	287500	306183	271000
25°	237867	280816	305478	259293
30°	222294	270874	303804	244717
35°	205470	257645	299955	227286
40°	187532	241499	288271	207016
45°	168421	222384	265918	184581
50°	148113	200663	237099	161094
55°	126118	177197	205392	136628
60°	102266	153235	173320	113491
65°	77960	130728	143652	92701
70°	59021	110646	113074	74070
75°	61851	92484	88740	59079
80°	56602	80953	63125	45369
85°	28302	82162	17761	24259

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 67.5°  
 Vertical Angle: 89.5°  
 Luminance: 301410 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	219.7	4.5
10°-20°	617.2	12.6
20°-30°	897.5	18.3
30°-40°	1005.3	20.5
40°-50°	909.5	18.6
50°-60°	660.5	13.5
60°-70°	377.9	7.7
70°-80°	167.7	3.4
80°-90°	40.6	0.8
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°	1734.4	35.4
0°-40°	2739.7	56.0
0°-60°	4309.7	88.0
0°-90°	4895.9	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4895.9	100.0

**CANDELA DISTRIBUTION:**

	0°	90°	180°	270°	360°	Flux
0°	2334	2334	2334	2334	2334	
5°	2264	2336	2368	2303	2264	213
15°	2036	2241	2344	2147	2036	572
25°	1713	2022	2200	1867	1713	787
35°	1337	1677	1952	1479	1337	835
45°	946	1250	1494	1037	946	730
55°	575	808	936	623	575	514
65°	262	439	482	311	262	264
75°	127	190	182	122	127	131
85°	20	57	12	17	20	31
90°	0	12	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°	2333.7	2333.7	2333.7	2333.7	2333.7	2333.7	2333.7	2333.7	2333.7	2333.7	2333.7
0.5°	2327.1	2332.8	2332.8	2332.4	2336.9	2336.9	2337.3	2337.3	2337.3	2340.6	2337.3
1°	2321.0	2328.3	2330.0	2331.6	2338.2	2339.8	2341.4	2342.3	2341.8	2343.9	2339.4
1.5°	2315.3	2323.8	2326.7	2330.4	2338.6	2342.7	2345.5	2346.8	2346.3	2347.2	2341.0
2°	2308.7	2318.5	2323.4	2328.8	2339.4	2344.7	2349.2	2351.3	2350.4	2350.0	2342.3
2.5°	2302.2	2313.2	2319.8	2327.1	2339.4	2346.8	2352.5	2354.9	2354.1	2352.5	2343.1
3°	2294.8	2307.5	2315.7	2325.1	2339.4	2348.4	2355.3	2358.6	2357.8	2354.5	2343.5
3.5°	2287.8	2301.3	2311.2	2322.6	2339.0	2350.0	2358.2	2361.9	2360.7	2356.6	2343.9
4°	2280.1	2295.2	2306.7	2319.8	2338.2	2351.3	2360.7	2364.8	2363.5	2357.8	2343.5
4.5°	2272.3	2288.7	2301.3	2316.9	2336.9	2352.1	2362.7	2367.6	2366.0	2359.0	2343.1
5°	2264.1	2281.3	2296.0	2313.6	2335.7	2352.5	2364.3	2370.1	2368.0	2359.8	2342.7
5.5°	2255.5	2274.3	2290.3	2309.9	2334.1	2352.5	2365.6	2371.7	2369.7	2360.7	2341.4
6°	2246.5	2266.6	2284.2	2305.8	2332.0	2352.1	2366.8	2373.8	2371.3	2360.7	2340.2
6.5°	2237.5	2258.8	2278.0	2301.3	2329.6	2351.7	2367.6	2375.0	2372.5	2360.7	2338.6
7°	2228.1	2250.6	2271.5	2296.8	2326.7	2350.8	2368.0	2375.8	2373.3	2360.3	2336.5
7.5°	2218.3	2242.0	2264.5	2291.9	2323.8	2350.0	2368.0	2376.6	2373.8	2359.4	2334.5
8°	2208.1	2233.0	2257.2	2286.6	2320.6	2348.4	2368.0	2377.0	2374.2	2358.6	2331.6
8.5°	2197.8	2223.6	2249.4	2280.9	2316.9	2346.3	2367.6	2377.0	2373.8	2357.4	2328.8
9°	2187.2	2214.2	2241.6	2275.2	2313.2	2344.3	2366.4	2377.0	2373.3	2355.3	2325.9
9.5°	2175.7	2204.4	2233.4	2268.6	2308.7	2341.8	2365.6	2376.2	2372.9	2353.7	2322.2
10°	2164.7	2194.2	2224.8	2262.1	2304.2	2339.4	2363.9	2375.4	2371.7	2351.3	2318.5
10.5°	2152.8	2183.5	2215.8	2255.1	2298.9	2336.1	2362.3	2374.2	2370.5	2348.8	2314.4
11°	2141.4	2173.3	2206.8	2248.2	2293.6	2332.8	2360.3	2372.5	2368.4	2345.9	2309.9
11.5°	2128.7	2161.8	2197.4	2240.8	2288.3	2329.2	2357.8	2370.9	2366.8	2342.7	2305.4
12°	2116.4	2151.2	2187.6	2232.6	2282.5	2325.1	2355.3	2368.8	2364.3	2339.4	2300.5
12.5°	2103.7	2139.3	2177.4	2224.8	2276.4	2321.0	2352.1	2366.4	2361.9	2335.7	2295.2
13°	2090.6	2127.5	2167.1	2216.2	2269.8	2316.5	2348.8	2363.5	2359.0	2331.6	2289.9
13.5°	2077.6	2115.2	2156.5	2207.2	2263.3	2311.6	2345.5	2360.3	2355.8	2327.1	2283.8
14°	2064.0	2102.9	2145.5	2198.2	2255.9	2306.3	2341.4	2357.0	2352.1	2322.6	2277.6
14.5°	2050.1	2090.2	2134.0	2188.8	2248.6	2300.5	2337.3	2353.3	2348.0	2317.7	2271.1
15°	2036.2	2077.6	2123.0	2179.4	2240.8	2294.8	2332.8	2349.6	2344.3	2312.4	2264.9
15.5°	2021.9	2063.6	2110.7	2169.2	2232.6	2288.7	2327.9	2345.1	2339.8	2306.7	2257.6
16°	2007.6	2050.5	2098.8	2159.0	2224.0	2282.1	2322.6	2340.6	2334.9	2300.9	2250.2
16.5°	1992.5	2037.0	2086.1	2148.7	2215.8	2275.6	2317.3	2335.7	2329.6	2294.8	2242.8
17°	1977.7	2023.1	2073.9	2138.1	2206.8	2268.6	2311.6	2330.8	2324.7	2288.3	2235.1
17.5°	1962.6	2008.8	2060.8	2126.6	2197.4	2261.2	2305.4	2325.1	2318.9	2281.3	2226.9
18°	1947.4	1994.5	2047.7	2115.2	2188.0	2253.5	2299.3	2319.3	2312.8	2274.7	2218.7
18.5°	1931.5	1979.8	2034.2	2103.3	2178.2	2245.7	2292.8	2313.2	2306.7	2267.4	2209.7
19°	1915.5	1964.6	2020.7	2091.1	2168.0	2237.5	2285.8	2307.1	2300.1	2259.6	2201.1
19.5°	1900.0	1949.5	2006.4	2078.8	2157.7	2228.9	2278.4	2300.1	2293.2	2251.8	2192.1
20°	1884.0	1934.4	1992.5	2066.5	2146.7	2220.3	2271.1	2293.2	2286.2	2244.1	2182.7
20.5°	1867.3	1918.8	1978.1	2053.4	2135.6	2211.3	2263.3	2286.2	2278.8	2235.5	2172.9
21°	1850.9	1902.9	1963.4	2040.3	2124.2	2201.9	2255.1	2278.4	2271.1	2226.9	2163.1



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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°	1800.2	1854.6	1918.0	1999.0	2088.2	2172.1	2229.3	2254.3	2246.5	2199.5	2131.6
23°	1783.4	1838.2	1902.4	1985.1	2075.9	2161.4	2220.3	2245.7	2237.5	2190.1	2120.5
23.5°	1765.8	1821.0	1886.5	1970.4	2062.8	2150.4	2210.9	2237.1	2228.9	2180.2	2109.5
24°	1748.2	1805.1	1870.5	1955.2	2049.7	2139.7	2201.1	2227.7	2219.5	2170.0	2097.6
24.5°	1730.6	1787.9	1854.2	1940.1	2036.2	2127.9	2191.3	2218.3	2210.1	2159.8	2085.3
25°	1713.0	1770.3	1837.4	1924.9	2022.3	2116.4	2181.1	2208.9	2199.9	2149.6	2073.0
25.5°	1695.0	1753.1	1820.6	1909.0	2008.0	2104.1	2170.8	2198.7	2190.1	2138.9	2060.4
26°	1677.4	1735.9	1803.0	1893.0	1993.7	2091.5	2160.2	2188.8	2180.2	2127.9	2047.3
26.5°	1659.0	1718.3	1786.3	1876.3	1978.5	2078.8	2149.1	2178.6	2169.6	2116.4	2033.8
27°	1641.0	1700.3	1769.1	1860.3	1963.0	2066.1	2138.1	2168.4	2159.0	2105.0	2019.5
27.5°	1622.6	1682.3	1751.5	1843.5	1947.4	2052.2	2126.6	2157.7	2148.3	2093.5	2005.1
28°	1604.2	1664.3	1733.1	1825.9	1931.5	2038.3	2114.8	2146.3	2136.9	2081.6	1990.4
28.5°	1585.8	1646.3	1715.9	1808.3	1915.1	2024.0	2102.1	2135.6	2125.8	2068.5	1974.9
29°	1567.0	1627.9	1697.9	1790.3	1898.4	2009.6	2089.8	2124.2	2114.4	2055.9	1959.3
29.5°	1548.1	1609.5	1679.9	1772.8	1881.2	1994.1	2076.7	2112.7	2102.9	2042.4	1943.8
30°	1529.7	1591.1	1660.2	1754.7	1864.0	1978.5	2063.6	2100.9	2090.6	2028.9	1927.8
30.5°	1510.5	1572.7	1642.2	1735.9	1846.8	1962.2	2049.7	2088.6	2078.8	2014.5	1911.0
31°	1491.3	1553.5	1623.4	1717.5	1828.8	1945.8	2035.4	2075.9	2066.5	1999.8	1894.3
31.5°	1472.5	1535.0	1604.6	1698.7	1810.4	1929.0	2021.1	2063.2	2054.2	1985.1	1877.5
32°	1453.6	1515.8	1585.0	1679.5	1792.0	1912.7	2006.0	2050.1	2041.1	1969.9	1859.9
32.5°	1434.4	1496.6	1566.1	1661.1	1773.6	1895.1	1990.0	2036.2	2028.5	1954.0	1842.3
33°	1415.2	1477.8	1546.5	1641.0	1754.7	1877.9	1974.0	2021.9	2014.5	1937.6	1823.9
33.5°	1395.9	1458.5	1527.7	1621.8	1735.5	1859.9	1957.7	2007.6	1999.4	1920.9	1805.5
34°	1376.7	1439.3	1507.6	1602.6	1716.3	1841.9	1941.3	1992.5	1983.5	1904.9	1786.3
34.5°	1357.1	1420.1	1488.4	1582.9	1696.2	1823.5	1924.5	1976.9	1967.9	1886.9	1767.0
35°	1337.4	1400.4	1468.4	1562.9	1677.0	1804.7	1907.4	1960.5	1952.4	1869.3	1747.4
35.5°	1318.2	1381.2	1448.7	1542.4	1657.0	1785.8	1889.8	1944.6	1936.8	1850.9	1726.5
36°	1298.6	1361.6	1428.7	1522.4	1636.9	1766.6	1871.8	1927.4	1920.0	1832.1	1706.1
36.5°	1279.3	1342.3	1409.4	1502.3	1616.9	1746.6	1853.3	1910.6	1902.4	1811.2	1684.4
37°	1259.3	1322.7	1389.8	1482.3	1596.4	1726.5	1834.5	1892.6	1884.0	1790.8	1662.7
37.5°	1240.1	1302.7	1368.9	1461.8	1575.1	1706.5	1814.9	1874.6	1865.2	1769.5	1640.6
38°	1220.0	1283.0	1349.3	1440.9	1554.3	1685.6	1794.8	1855.4	1844.3	1747.4	1618.1
38.5°	1201.2	1263.8	1328.8	1420.5	1533.4	1664.3	1774.8	1835.3	1823.5	1724.5	1595.2
39°	1181.6	1243.7	1308.8	1399.2	1512.1	1643.9	1753.9	1813.7	1801.8	1701.2	1571.1
39.5°	1161.5	1224.5	1288.8	1379.6	1490.9	1622.2	1733.1	1791.6	1778.1	1677.0	1547.3
40°	1141.5	1204.9	1268.7	1358.7	1470.0	1600.5	1710.6	1768.2	1754.7	1652.5	1522.8
40.5°	1122.6	1185.2	1248.7	1337.4	1447.9	1578.0	1688.1	1745.3	1730.6	1627.1	1497.8
41°	1102.2	1165.6	1228.2	1316.6	1426.2	1555.9	1664.3	1720.8	1706.1	1601.3	1472.9
41.5°	1083.0	1146.0	1208.6	1296.1	1404.5	1533.4	1641.8	1697.1	1680.7	1575.1	1447.9
42°	1063.3	1125.9	1188.5	1274.8	1382.4	1510.1	1617.3	1671.7	1654.9	1548.5	1422.1
42.5°	1044.1	1106.7	1168.1	1254.0	1360.3	1487.2	1593.1	1647.6	1629.1	1522.4	1396.4
43°	1024.5	1087.1	1148.0	1233.5	1338.7	1464.3	1568.2	1621.8	1603.0	1494.1	1370.2
43.5°	1005.2	1067.8	1128.0	1212.7	1316.6	1440.5	1543.6	1596.0	1576.0	1466.7	1344.0



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**CANDELA DISTRIBUTION (continued):**

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
45°	946.3	1009.3	1068.2	1150.1	1249.5	1368.1	1467.1	1516.6	1494.1	1383.3	1263.8
45.5°	927.9	989.7	1048.2	1128.8	1227.4	1344.0	1441.8	1490.0	1466.3	1355.4	1237.2
46°	908.3	970.5	1028.5	1107.9	1204.9	1319.0	1415.2	1463.0	1438.5	1327.6	1209.8
46.5°	889.0	951.6	1008.9	1087.5	1182.0	1294.9	1389.4	1435.6	1409.9	1299.4	1183.2
47°	869.8	932.0	989.3	1066.6	1159.5	1269.9	1363.2	1407.8	1381.6	1271.2	1156.2
47.5°	851.0	912.8	969.6	1046.1	1137.0	1245.4	1336.6	1380.0	1353.0	1243.3	1130.0
48°	831.8	893.5	950.0	1025.3	1114.9	1220.8	1310.0	1352.6	1324.8	1215.5	1103.4
48.5°	812.9	874.7	930.4	1004.8	1092.4	1195.9	1283.8	1325.2	1296.5	1188.1	1077.2
49°	794.1	855.9	911.1	984.4	1069.9	1171.3	1257.2	1296.9	1267.5	1159.9	1051.5
49.5°	775.7	836.7	892.3	964.3	1047.4	1146.8	1230.7	1269.1	1239.2	1132.9	1025.7
50°	756.5	818.3	872.7	944.3	1024.9	1122.2	1204.1	1240.9	1211.0	1105.1	999.9
50.5°	738.1	799.4	853.4	923.4	1002.8	1097.7	1177.9	1212.7	1182.4	1078.5	974.1
51°	719.7	780.6	834.6	902.9	980.3	1072.7	1151.3	1185.2	1154.6	1051.5	949.6
51.5°	701.2	761.8	815.8	883.3	958.2	1049.0	1125.1	1157.4	1125.9	1024.5	924.6
52°	683.2	743.4	797.4	863.7	936.5	1024.5	1099.3	1129.6	1098.1	998.3	900.1
52.5°	665.2	725.0	778.6	844.0	914.8	1000.3	1072.7	1101.4	1070.3	972.1	875.9
53°	646.8	707.0	759.8	823.6	893.1	976.2	1046.5	1074.0	1043.3	946.3	851.8
53.5°	628.0	688.2	741.3	804.3	871.0	952.9	1020.8	1046.5	1015.9	920.1	828.1
54°	610.4	670.6	723.3	784.7	849.8	928.7	995.0	1019.5	988.0	895.2	804.8
54.5°	592.4	652.1	704.9	765.1	828.9	905.8	970.0	991.7	961.9	870.2	781.8
55°	574.8	635.0	686.9	746.2	807.6	882.9	945.1	966.4	936.1	845.7	759.3
55.5°	557.2	617.0	668.9	727.0	786.8	860.0	919.7	938.9	909.1	821.1	736.0
56°	539.6	599.8	651.3	707.8	765.5	836.7	894.4	912.8	883.3	796.6	714.3
56.5°	522.0	582.2	633.7	689.0	745.4	814.2	869.8	886.6	857.5	772.8	693.1
57°	504.9	565.0	616.1	670.6	725.4	792.1	845.7	860.8	832.2	749.5	671.4
57.5°	488.1	547.8	598.6	651.7	705.3	770.4	821.9	835.4	807.2	726.6	650.5
58°	470.9	531.0	581.4	633.3	685.3	748.3	797.8	810.5	783.1	704.1	630.1
58.5°	454.5	514.3	564.6	615.3	666.1	727.0	774.5	785.9	758.5	681.2	609.6
59°	438.2	498.3	547.8	597.7	646.4	705.7	751.2	761.8	734.4	659.5	590.0
59.5°	421.8	481.5	530.2	580.1	627.6	684.9	728.2	738.1	711.1	637.8	570.3
60°	406.3	465.6	513.9	563.0	608.8	664.0	705.7	714.7	688.6	617.0	551.1
60.5°	390.3	449.2	497.1	545.4	590.4	644.0	683.2	691.4	665.2	596.1	531.9
61°	374.8	433.7	481.1	528.6	572.4	623.9	661.6	668.9	643.6	575.6	513.9
61.5°	359.6	418.1	464.8	511.8	555.2	604.3	640.3	646.8	621.5	555.6	495.9
62°	344.9	403.0	449.6	495.9	537.2	585.1	619.0	625.1	601.0	536.8	478.3
62.5°	329.8	387.9	434.1	479.5	520.4	565.8	598.1	603.5	579.7	517.1	460.7
63°	315.8	373.1	418.9	464.0	503.2	547.0	577.7	582.6	558.9	498.3	443.9
63.5°	301.9	358.4	403.8	448.8	486.9	528.6	557.6	562.1	539.2	479.9	427.1
64°	288.4	343.7	389.9	433.7	470.5	510.6	538.0	542.5	519.6	463.1	411.2
64.5°	274.5	329.3	375.2	418.5	454.9	493.0	518.8	522.9	500.4	445.1	395.6
65°	261.8	315.8	361.3	404.2	439.0	475.8	500.4	503.6	482.4	428.4	380.5
65.5°	248.7	302.3	347.3	390.3	423.9	458.6	482.0	485.2	463.5	411.2	365.4
66°	236.1	288.8	334.3	376.4	409.1	441.9	464.0	466.8	444.3	395.2	351.0





TEST NUMBER: P776249

CATALOG NUMBER: HCDJBL3040CSD-HCD41TRH-HCD41TRLWW-4000lm-5000K

**CANDELA DISTRIBUTION (continued):**

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
67.5°	201.7	250.4	295.0	335.5	366.6	394.4	413.2	414.9	389.9	349.4	308.9
68°	191.5	238.5	283.1	322.8	353.5	378.9	396.4	397.7	372.7	334.3	296.2
68.5°	182.1	226.7	270.8	310.1	340.4	364.1	380.9	381.3	356.4	319.1	283.5
69°	173.1	215.2	259.0	297.8	326.9	350.2	365.8	365.8	340.0	304.0	271.3
69.5°	165.3	204.2	247.5	285.6	313.8	336.3	351.4	350.6	323.6	289.7	259.4
70°	160.4	193.5	236.1	273.7	300.7	322.8	337.1	335.5	307.3	276.2	247.5
70.5°	157.5	183.3	225.4	261.8	288.0	308.9	322.8	320.8	293.3	262.7	236.5
71°	154.7	174.3	214.8	250.8	276.2	295.8	308.5	305.6	279.4	250.0	225.4
71.5°	151.8	165.7	205.0	239.3	264.3	283.1	295.4	291.3	265.1	237.7	214.8
72°	148.9	158.7	195.2	228.7	252.8	271.3	282.3	277.8	252.0	225.8	204.6
72.5°	145.2	153.8	185.7	218.5	241.8	259.0	269.6	264.7	239.3	214.4	194.3
73°	141.6	150.1	177.2	208.2	230.7	247.5	258.2	252.0	227.1	202.9	184.5
73.5°	138.3	146.9	168.6	198.4	220.1	236.1	245.9	239.7	215.2	191.9	175.1
74°	134.6	143.6	160.8	189.0	209.9	225.8	234.4	227.9	204.2	181.2	165.7
74.5°	131.3	140.7	153.0	180.0	200.1	215.2	223.4	216.4	193.1	171.0	156.7
75°	127.2	137.5	146.1	171.4	190.2	205.0	213.2	205.4	182.5	161.2	148.1
75.5°	123.1	134.2	141.1	162.8	180.8	194.7	202.1	194.7	172.2	151.4	139.5
76°	118.6	130.5	136.2	155.1	172.2	185.3	192.3	184.1	162.0	142.0	130.9
76.5°	113.7	126.4	131.3	147.3	163.2	176.3	182.5	173.9	152.6	132.6	122.7
77°	109.2	122.3	126.0	140.7	155.1	167.3	173.1	163.7	142.8	123.6	115.0
77.5°	104.3	118.2	122.3	134.6	147.3	158.7	163.7	154.2	133.4	114.6	107.2
78°	99.4	113.7	119.1	128.5	139.5	150.1	154.7	144.8	124.0	106.0	99.0
78.5°	94.1	109.6	115.8	122.3	132.1	142.4	146.1	135.8	114.6	97.4	91.6
79°	88.8	104.7	112.1	116.2	125.2	134.6	137.5	126.8	105.1	88.8	84.3
79.5°	83.5	100.2	108.4	110.9	118.2	127.2	129.3	117.8	96.1	80.6	76.9
80°	78.1	95.3	104.3	105.6	111.7	119.9	121.5	109.2	87.1	72.8	70.0
80.5°	72.4	90.4	100.2	101.1	105.6	112.9	113.7	101.5	78.1	64.6	63.4
81°	66.7	85.1	96.1	96.6	99.4	106.0	106.0	92.9	69.1	57.3	56.9
81.5°	61.0	80.2	91.6	92.1	93.7	99.4	98.6	85.1	60.1	49.9	50.3
82°	55.2	74.5	87.1	87.6	88.0	92.9	90.8	77.3	51.1	43.8	44.2
82.5°	49.5	69.1	82.6	83.5	82.6	86.7	83.5	70.0	44.2	38.0	38.9
83°	43.0	63.4	78.1	79.0	77.3	80.2	76.5	62.6	36.8	32.3	33.5
83.5°	36.8	57.7	73.2	75.3	72.0	74.1	69.6	56.1	29.5	26.6	28.2
84°	30.7	52.0	68.7	71.2	66.7	67.9	63.0	49.1	22.5	20.9	22.9
84.5°	25.0	46.2	63.8	67.1	61.8	62.2	56.9	43.4	15.1	16.8	18.0
85°	19.6	40.5	59.3	63.0	56.9	56.5	50.7	37.6	12.3	13.1	13.1
85.5°	16.0	35.2	54.8	58.9	52.4	51.1	45.0	32.3	9.8	9.4	9.4
86°	13.9	30.7	50.3	54.4	47.9	45.8	40.1	26.6	8.2	6.1	5.7
86.5°	11.5	27.0	45.8	49.9	43.4	40.9	34.8	20.9	6.5	3.3	3.3
87°	9.4	23.7	41.3	45.0	39.3	36.0	29.5	16.4	4.9	1.6	1.2
87.5°	7.4	20.5	36.4	40.5	34.8	31.1	24.1	11.9	4.1	0.8	0.0
88°	5.3	17.2	31.9	35.6	30.3	26.2	18.8	8.2	2.5	0.4	0.0
88.5°	3.3	13.9	27.0	31.1	26.2	21.3	14.3	4.9	1.2	0.0	0.0



TEST NUMBER: P776249

CATALOG NUMBER: HCDJBL3040CSD-HCD41TRH-HCD41TRLWW-4000lm-5000K

**CANDELA DISTRIBUTION (continued):**

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
90°	0.0	4.5	13.5	15.5	12.3	9.0	3.3	0.4	0.0	0.0	0.0



TEST NUMBER: P776249

CATALOG NUMBER: HCDJBL3040CSD-HCD41TRH-HCD41TRLWW-4000lm-5000K

**CANDELA DISTRIBUTION (continued):**

	247.5°	270°	292.5°	315°	337.5°	360°
0°	2333.7	2333.7	2333.7	2333.7	2333.7	2333.7
0.5°	2332.8	2333.7	2330.0	2327.5	2326.7	2327.1
1°	2332.8	2331.6	2326.3	2322.2	2320.6	2321.0
1.5°	2332.4	2329.2	2321.8	2316.5	2314.4	2315.3
2°	2331.6	2326.3	2317.3	2310.8	2307.9	2308.7
2.5°	2330.4	2323.4	2312.4	2305.0	2301.3	2302.2
3°	2329.2	2320.2	2307.1	2298.1	2294.4	2294.8
3.5°	2327.1	2316.5	2301.8	2291.5	2287.0	2287.8
4°	2325.5	2312.4	2296.0	2284.2	2278.8	2280.1
4.5°	2323.0	2308.3	2289.5	2276.8	2270.7	2272.3
5°	2320.2	2303.4	2283.3	2269.0	2262.5	2264.1
5.5°	2317.3	2298.5	2276.4	2260.8	2253.9	2255.5
6°	2314.0	2293.6	2269.0	2252.2	2244.9	2246.5
6.5°	2310.3	2287.8	2262.1	2243.7	2235.5	2237.5
7°	2306.3	2282.1	2254.3	2234.7	2225.7	2228.1
7.5°	2302.2	2276.0	2246.1	2225.2	2215.8	2218.3
8°	2297.7	2269.4	2237.9	2215.4	2205.2	2208.1
8.5°	2292.8	2262.9	2228.9	2205.6	2194.6	2197.8
9°	2287.8	2255.5	2220.3	2195.4	2183.9	2187.2
9.5°	2282.1	2248.2	2210.5	2184.7	2172.5	2175.7
10°	2276.4	2240.4	2201.1	2173.7	2161.0	2164.7
10.5°	2270.7	2232.6	2191.3	2162.6	2149.6	2152.8
11°	2264.1	2224.0	2181.1	2151.2	2137.3	2141.4
11.5°	2257.6	2215.8	2170.8	2139.7	2125.0	2128.7
12°	2250.6	2206.4	2159.8	2127.5	2112.3	2116.4
12.5°	2243.7	2197.4	2148.7	2114.8	2099.6	2103.7
13°	2235.9	2188.0	2137.3	2102.5	2086.6	2090.6
13.5°	2228.1	2178.2	2125.8	2089.4	2072.6	2077.6
14°	2219.9	2168.0	2113.6	2076.3	2059.5	2064.0
14.5°	2211.7	2157.7	2101.7	2062.8	2045.6	2050.1
15°	2203.2	2147.1	2089.0	2049.3	2031.3	2036.2
15.5°	2194.2	2135.6	2075.9	2035.0	2017.0	2021.9
16°	2184.7	2124.6	2062.8	2021.1	2002.3	2007.6
16.5°	2175.3	2113.6	2049.7	2006.8	1987.5	1992.5
17°	2165.5	2101.3	2036.2	1992.0	1972.0	1977.7
17.5°	2155.7	2089.0	2021.9	1976.9	1956.4	1962.6
18°	2145.1	2076.7	2008.0	1961.8	1941.3	1947.4
18.5°	2134.8	2064.0	1993.3	1946.2	1925.4	1931.5
19°	2123.8	2051.0	1978.5	1930.7	1909.4	1915.5
19.5°	2112.7	2037.9	1963.4	1914.3	1893.0	1900.0
20°	2101.3	2023.5	1947.9	1898.4	1877.1	1884.0
20.5°	2089.4	2009.6	1932.3	1882.0	1860.7	1867.3
21°	2076.7	1994.9	1916.4	1865.2	1843.9	1850.9

TEST NUMBER: P776249

CATALOG NUMBER: HCDJBL3040CSD-HCD41TRH-HCD41TRLWW-4000lm-5000K

**CANDELA DISTRIBUTION (continued):**

	247.5°	270°	292.5°	315°	337.5°	360°
22.5°	2038.7	1950.3	1866.4	1813.7	1792.4	1800.2
23°	2024.8	1933.9	1849.3	1796.1	1775.2	1783.4
23.5°	2010.9	1918.4	1831.7	1778.1	1757.6	1765.8
24°	1996.1	1901.6	1814.1	1760.1	1739.6	1748.2
24.5°	1981.8	1884.9	1796.1	1741.7	1721.6	1730.6
25°	1966.3	1867.3	1777.7	1723.2	1703.2	1713.0
25.5°	1951.1	1850.5	1759.7	1704.8	1685.2	1695.0
26°	1934.8	1833.3	1740.4	1686.0	1666.8	1677.4
26.5°	1918.8	1815.7	1722.4	1666.8	1648.0	1659.0
27°	1902.4	1796.9	1702.8	1648.0	1629.6	1641.0
27.5°	1885.7	1778.9	1684.0	1628.7	1610.7	1622.6
28°	1868.5	1760.1	1663.9	1609.1	1591.5	1604.2
28.5°	1851.7	1741.7	1645.1	1589.9	1572.3	1585.8
29°	1833.7	1722.8	1625.1	1570.2	1553.5	1567.0
29.5°	1815.7	1703.6	1605.8	1550.6	1534.2	1548.1
30°	1798.1	1684.0	1585.4	1531.0	1515.0	1529.7
30.5°	1780.1	1664.3	1565.3	1510.9	1495.4	1510.5
31°	1761.3	1644.7	1544.9	1490.9	1476.1	1491.3
31.5°	1742.1	1624.6	1524.8	1470.8	1456.5	1472.5
32°	1722.8	1604.2	1504.4	1450.4	1436.9	1453.6
32.5°	1703.2	1584.1	1483.5	1431.1	1416.8	1434.4
33°	1683.6	1563.7	1463.0	1410.3	1397.6	1415.2
33.5°	1663.1	1543.2	1442.6	1390.2	1377.5	1395.9
34°	1642.6	1522.0	1422.1	1369.4	1357.9	1376.7
34.5°	1622.2	1500.7	1401.3	1348.9	1338.3	1357.1
35°	1601.3	1479.4	1379.6	1328.8	1318.2	1337.4
35.5°	1579.6	1458.5	1358.7	1308.4	1298.6	1318.2
36°	1558.0	1437.3	1338.3	1287.9	1278.5	1298.6
36.5°	1536.3	1415.2	1317.4	1267.9	1258.9	1279.3
37°	1513.8	1393.1	1296.1	1247.0	1239.2	1259.3
37.5°	1491.3	1371.4	1274.8	1226.6	1219.2	1240.1
38°	1468.0	1349.3	1253.6	1206.1	1199.2	1220.0
38.5°	1446.3	1327.2	1232.7	1186.1	1179.5	1201.2
39°	1422.5	1305.1	1211.8	1165.6	1159.9	1181.6
39.5°	1398.8	1282.6	1190.6	1146.0	1140.2	1161.5
40°	1375.5	1260.1	1169.3	1125.1	1119.8	1141.5
40.5°	1351.8	1237.6	1148.0	1105.1	1100.6	1122.6
41°	1328.0	1215.5	1127.1	1084.6	1080.9	1102.2
41.5°	1304.3	1193.0	1105.9	1065.0	1061.3	1083.0
42°	1280.6	1170.9	1085.0	1045.3	1041.2	1063.3
42.5°	1256.8	1148.8	1064.1	1024.9	1022.4	1044.1
43°	1231.9	1126.3	1043.7	1005.2	1003.2	1024.5
43.5°	1207.7	1103.8	1022.4	985.2	983.1	1005.2



TEST NUMBER: P776249

CATALOG NUMBER: HCDJBL3040CSD-HCD41TRH-HCD41TRLWW-4000lm-5000K

**CANDELA DISTRIBUTION (continued):**

	247.5°	270°	292.5°	315°	337.5°	360°
45°	1134.9	1037.1	961.0	926.7	925.4	946.3
45.5°	1111.2	1015.9	941.0	907.0	906.2	927.9
46°	1086.2	994.2	920.9	888.2	887.4	908.3
46.5°	1062.5	972.1	900.9	869.0	868.2	889.0
47°	1038.0	950.4	880.4	850.2	849.8	869.8
47.5°	1013.8	928.7	860.4	830.9	830.9	851.0
48°	989.7	907.4	840.8	811.7	812.1	831.8
48.5°	966.0	885.8	820.7	793.3	793.3	812.9
49°	942.6	864.9	801.9	774.9	774.9	794.1
49.5°	918.9	844.0	782.3	755.7	756.9	775.7
50°	894.8	822.8	762.6	737.2	738.9	756.5
50.5°	871.4	801.9	743.4	719.2	720.1	738.1
51°	849.3	781.0	725.0	701.2	702.1	719.7
51.5°	826.0	760.6	706.6	682.4	684.5	701.2
52°	803.5	740.5	687.7	665.7	666.9	683.2
52.5°	781.0	720.5	669.3	647.6	649.3	665.2
53°	759.3	700.0	651.7	630.1	631.7	646.8
53.5°	737.2	680.8	633.7	612.5	614.1	628.0
54°	716.8	660.7	616.1	595.7	596.9	610.4
54.5°	695.5	641.9	599.0	578.9	580.1	592.4
55°	674.7	622.7	581.8	562.1	563.4	574.8
55.5°	653.8	604.7	565.0	545.8	546.6	557.2
56°	634.1	585.9	548.2	529.8	529.8	539.6
56.5°	614.5	568.7	532.3	513.9	513.5	522.0
57°	595.3	550.3	515.9	497.9	497.1	504.9
57.5°	576.5	533.1	500.0	482.4	480.7	488.1
58°	557.6	515.9	484.4	467.2	465.6	470.9
58.5°	539.2	499.5	468.9	452.1	449.2	454.5
59°	521.2	482.8	454.1	437.8	434.1	438.2
59.5°	503.6	467.2	439.0	423.0	418.5	421.8
60°	486.5	450.9	424.3	409.1	403.8	406.3
60.5°	469.3	435.7	409.9	394.4	388.7	390.3
61°	453.3	420.6	395.6	380.9	374.4	374.8
61.5°	436.9	405.9	382.1	367.4	360.0	359.6
62°	421.4	391.5	368.2	354.3	346.5	344.9
62.5°	405.9	377.2	354.3	340.8	332.6	329.8
63°	390.7	363.3	341.2	327.7	319.5	315.8
63.5°	376.4	350.2	328.1	315.0	306.4	301.9
64°	362.1	336.3	315.4	302.3	293.8	288.4
64.5°	348.6	324.0	302.8	290.1	281.5	274.5
65°	335.5	311.3	290.9	277.8	269.6	261.8
65.5°	322.0	299.1	278.6	265.9	257.8	248.7
66°	308.5	286.8	266.8	254.1	246.3	236.1



TEST NUMBER: P776249

CATALOG NUMBER: HCDJBL3040CSD-HCD41TRH-HCD41TRLWW-4000lm-5000K

**CANDELA DISTRIBUTION (continued):**

	247.5°	270°	292.5°	315°	337.5°	360°
67.5°	272.1	252.8	233.6	220.9	212.3	201.7
68°	260.2	241.8	223.4	210.7	201.3	191.5
68.5°	249.2	231.2	213.2	200.9	190.7	182.1
69°	238.1	220.9	203.3	191.5	180.4	173.1
69.5°	227.5	210.7	193.9	182.1	170.6	165.3
70°	217.2	201.3	184.9	173.5	161.6	160.4
70.5°	207.4	191.9	175.9	165.7	153.8	157.5
71°	197.2	182.9	167.3	157.9	147.7	154.7
71.5°	187.8	173.9	159.6	150.6	144.8	151.8
72°	178.8	165.3	151.8	144.8	141.6	148.9
72.5°	170.2	157.1	146.9	139.1	138.7	145.2
73°	161.2	149.3	139.9	133.4	135.4	141.6
73.5°	153.0	142.4	133.0	128.1	132.1	138.3
74°	145.2	135.4	126.0	122.3	128.1	134.6
74.5°	137.5	128.5	119.1	118.2	124.4	131.3
75°	129.7	121.5	113.3	114.1	120.3	127.2
75.5°	122.7	114.1	108.0	110.5	115.8	123.1
76°	115.4	108.0	102.7	106.8	111.3	118.6
76.5°	108.4	101.9	97.4	103.1	106.8	113.7
77°	101.9	95.7	92.9	99.0	101.9	109.2
77.5°	95.3	90.0	88.0	94.5	97.4	104.3
78°	88.8	84.3	83.5	90.4	92.5	99.4
78.5°	82.2	78.6	78.6	85.9	87.1	94.1
79°	76.1	73.2	74.1	81.4	81.8	88.8
79.5°	70.0	67.5	70.0	76.9	76.5	83.5
80°	64.2	62.6	65.9	72.0	70.8	78.1
80.5°	58.5	57.7	61.8	67.5	65.5	72.4
81°	52.8	52.8	57.7	62.6	60.1	66.7
81.5°	47.5	48.3	53.6	57.7	54.4	61.0
82°	42.5	43.4	49.1	53.2	49.1	55.2
82.5°	37.6	38.9	44.6	48.3	43.8	49.5
83°	32.3	34.8	39.7	43.8	38.5	43.0
83.5°	27.4	30.3	35.2	39.3	33.5	36.8
84°	22.5	25.8	30.3	34.8	29.0	30.7
84.5°	17.6	21.3	25.4	30.3	25.0	25.0
85°	13.1	16.8	20.5	25.4	21.7	19.6
85.5°	9.0	12.7	15.1	20.5	18.4	16.0
86°	5.3	8.6	11.5	15.5	15.1	13.9
86.5°	2.0	4.5	7.8	11.9	12.3	11.5
87°	0.0	0.8	4.1	8.2	9.4	9.4
87.5°	0.0	0.0	0.4	4.1	6.1	7.4
88°	0.0	0.0	0.0	0.4	3.3	5.3
88.5°	0.0	0.0	0.0	0.4	0.8	3.3



TEST NUMBER: P776249

CATALOG NUMBER: HCDJBL3040CSD-HCD41TRH-HCD41TRLWW-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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Scaled Data Report



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Scaled Data Report





21.5°	1834.1	1886.9	1948.3	2026.8	2112.7	2192.1	2246.9	2270.7	2263.3	2217.9	2152.8
22°	1817.3	1870.9	1933.5	2013.3	2100.5	2182.3	2238.3	2262.9	2255.1	2208.9	2142.2



44°	985.2	1048.2	1107.9	1191.4	1293.7	1416.4	1518.3	1569.4	1549.0	1438.9	1316.6
44.5°	966.4	1028.5	1087.9	1170.5	1271.6	1392.3	1492.9	1543.2	1522.0	1411.9	1290.4



66.5°	224.2	275.3	320.8	362.5	394.4	425.5	446.4	449.2	425.5	379.7	337.1
67°	212.7	262.7	307.7	349.4	380.1	409.9	429.6	432.0	407.9	364.5	323.2



89°	1.2	10.6	21.7	25.8	21.7	17.2	9.8	2.5	0.4	0.0	0.0
89.5°	0.4	7.8	16.8	20.9	16.8	12.7	6.1	1.2	0.0	0.0	0.0



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21.5°	2064.0	1980.6	1900.0	1848.4	1826.8	1834.1
22°	2051.8	1965.4	1882.8	1831.3	1810.0	1817.3

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44°	1183.2	1081.7	1002.4	966.0	963.9	985.2
44.5°	1159.9	1059.6	981.5	945.9	944.7	966.4



66.5°	296.2	274.9	255.7	243.0	234.4	224.2
67°	283.9	263.5	244.2	232.0	223.4	212.7

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

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(END OF REPORT)