

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: P776561

Luminaire Tested: HCDJBS4050CSD-HCD41TRMB-5000lm-3000K

Issue Date: 2/13/2024

Test Information

Test Method: LM-79-2019
Report Number: P776561
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (A2312156B031)
Test Lab:
Issue Date: 2/13/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: HALO COMMERCIAL
Catalog Number: HCDJBS4050CSD-HCD41TRMB-5000lm-3000K
Description: 4 INCH ROUND SHALLOW-WIDE MATTE BLACK TRIM
Light Source: SELECTABLE LUMENS AND CCT ARRAY 90CRI / 3000K CCT
Ballast/Driver: -

Summary

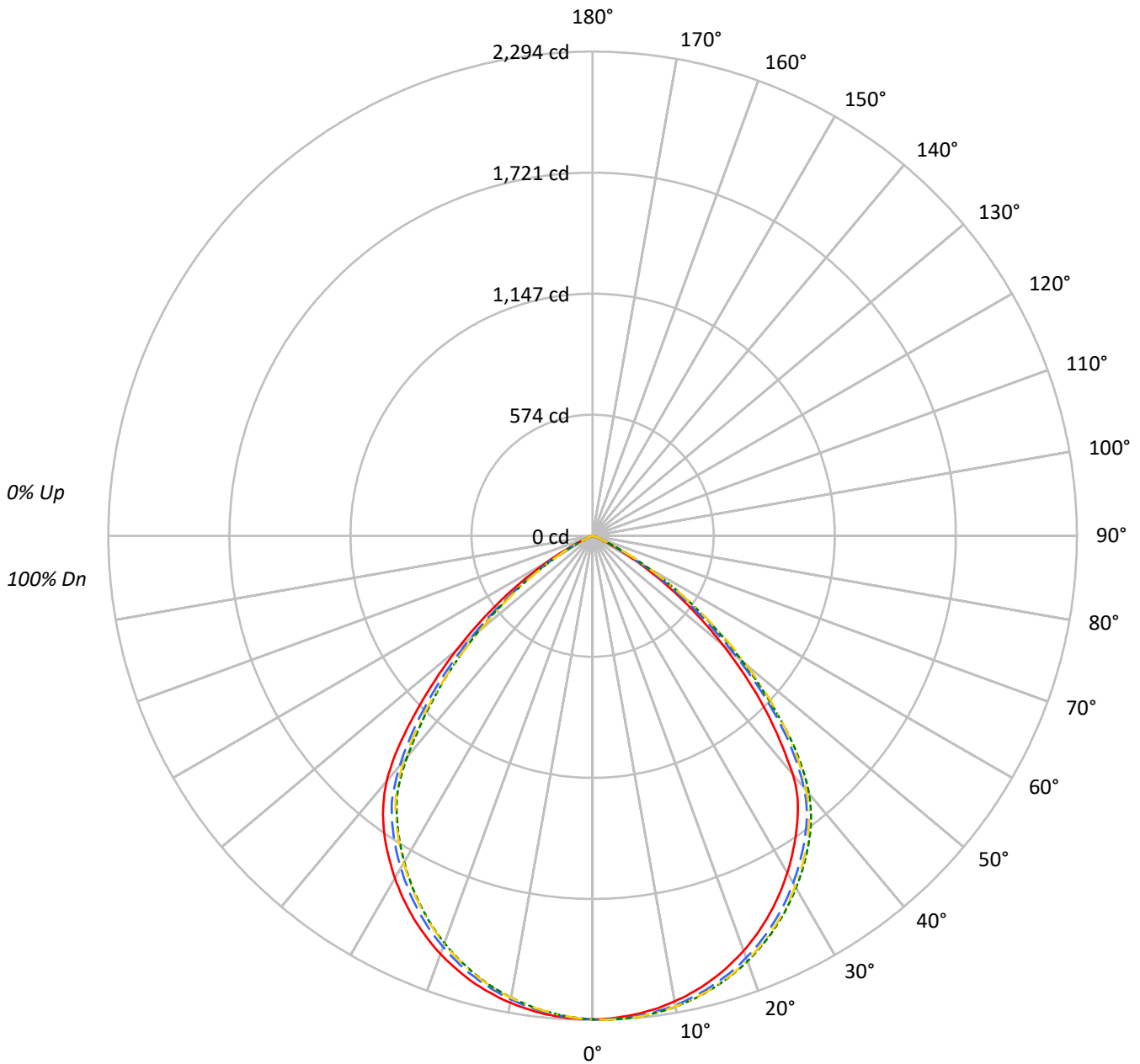
Lumens per Lamp: N/A
Luminaire Lumens: 4243.7 lumens
Efficiency: N/A
Efficacy: 88.4 lumens/watt
Spacing Criteria (0/90/45): 1.21 / 1.21 / 1.26
Luminous Opening: Circular (Dia: 0.33' x H: 0')
CIE Type: Direct

Input Watts (W): 48
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				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	0
RCR																		
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100
1	112	109	106	103	109	106	104	101	102	100	98	99	97	95	95	94	92	90
2	105	98	93	89	102	97	92	88	93	89	86	90	87	84	87	85	82	81
3	97	89	83	78	95	88	82	77	85	80	76	82	78	75	80	76	73	72
4	90	81	74	68	88	80	73	68	77	72	67	75	70	66	73	69	65	64
5	84	74	66	61	82	73	66	60	71	64	60	69	63	59	67	62	59	57
6	78	67	60	54	77	66	59	54	65	58	54	63	57	53	62	57	53	51
7	73	62	54	49	72	61	54	49	59	53	48	58	52	48	57	52	48	46
8	69	57	49	44	67	56	49	44	55	48	44	54	48	44	53	47	43	42
9	64	52	45	40	63	52	45	40	51	44	40	50	44	40	49	43	40	38
10	60	49	42	37	59	48	41	37	47	41	37	46	41	36	45	40	36	35

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°	270°
0°	288360	288360	288360	288360
5°	287692	289335	288046	286518
10°	286214	289473	287109	283901
15°	283809	288903	285268	280122
20°	280161	287313	282277	274991
25°	274859	284343	278025	268208
30°	267997	280015	272182	259351
35°	259058	273899	264405	248488
40°	242124	262051	249221	224101
45°	204230	229450	211260	184048
50°	158059	182356	164618	138774
55°	108499	130638	113897	91671
60°	58722	76970	63529	46313
65°	17986	27813	19803	12447
70°	1693	1877	1693	1693
75°	1799	1799	1799	1799
80°	1667	1667	1377	1667
85°	722	1300	722	1300

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 112.5°
 Vertical Angle: 45°
 Luminance: 231283 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	216.4	5.1
10°-20°	615.7	14.5
20°-30°	915.8	21.6
30°-40°	1058.5	24.9
40°-50°	893.2	21.0
50°-60°	454.4	10.7
60°-70°	85.0	2.0
70°-80°	3.7	0.1
80°-90°	1.0	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°	1747.9	41.2
0°-40°	2806.4	66.1
0°-60°	4153.9	97.9
0°-90°	4243.7	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4243.7	100.0

CANDELA DISTRIBUTION:

	0°	90°	180°	270°	360°	Flux
0°	2291	2291	2291	2291	2291	
5°	2277	2290	2280	2268	2277	216
15°	2178	2217	2190	2150	2178	614
25°	1979	2048	2002	1932	1979	911
35°	1686	1783	1721	1617	1686	1050
45°	1148	1289	1187	1034	1148	879
55°	494	595	519	418	494	446
65°	60	93	66	42	60	80
75°	4	4	4	4	4	4
85°	0	1	0	1	0	1
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°	2291.3	2291.3	2291.3	2291.3	2291.3	2291.3	2291.3	2291.3	2291.3	2291.3	2291.3
0.5°	2290.8	2290.8	2291.7	2292.2	2292.7	2292.7	2292.7	2290.8	2290.3	2290.8	2290.3
1°	2290.3	2291.3	2292.2	2292.7	2293.1	2293.6	2293.1	2291.3	2290.3	2290.3	2289.4
1.5°	2289.4	2290.8	2292.2	2293.1	2293.1	2294.1	2293.6	2291.7	2289.9	2288.9	2288.0
2°	2288.5	2290.3	2291.7	2293.6	2293.6	2294.5	2294.1	2291.7	2289.4	2288.0	2286.2
2.5°	2286.6	2288.9	2291.3	2293.6	2293.6	2294.1	2293.1	2291.3	2288.5	2286.6	2284.8
3°	2285.2	2288.0	2290.3	2292.7	2293.6	2294.1	2293.1	2289.9	2287.6	2285.2	2282.4
3.5°	2283.4	2286.6	2289.9	2292.2	2292.7	2293.6	2293.1	2289.4	2285.7	2282.9	2280.6
4°	2282.0	2285.2	2288.5	2291.3	2292.2	2293.1	2292.2	2288.9	2284.3	2281.0	2278.3
4.5°	2279.7	2283.4	2287.6	2289.9	2291.3	2292.2	2290.8	2288.0	2282.4	2278.3	2275.0
5°	2277.3	2281.5	2285.7	2288.9	2290.3	2290.8	2289.4	2286.2	2280.1	2275.9	2272.2
5.5°	2274.5	2279.2	2283.8	2287.6	2288.5	2289.9	2288.5	2284.3	2278.3	2273.6	2269.0
6°	2271.3	2276.9	2282.4	2285.7	2287.1	2288.0	2286.6	2282.4	2275.5	2270.4	2265.7
6.5°	2268.0	2274.1	2279.7	2283.8	2285.2	2286.2	2284.3	2280.6	2272.7	2267.6	2262.5
7°	2265.2	2271.3	2277.3	2282.0	2282.9	2283.8	2282.0	2278.3	2269.4	2263.4	2258.7
7.5°	2261.5	2268.0	2274.5	2279.2	2280.1	2282.0	2279.7	2275.5	2266.2	2260.1	2254.6
8°	2257.8	2264.8	2271.8	2276.9	2277.8	2279.2	2276.9	2272.2	2262.5	2255.9	2250.4
8.5°	2253.6	2261.1	2268.5	2273.6	2275.0	2276.4	2274.1	2269.0	2258.7	2251.8	2245.7
9°	2249.0	2257.3	2265.2	2270.4	2271.8	2273.6	2271.3	2265.7	2255.0	2247.6	2240.6
9.5°	2244.3	2253.2	2261.5	2267.1	2268.5	2270.4	2267.6	2262.5	2251.3	2242.9	2235.5
10°	2239.7	2249.0	2257.3	2263.8	2265.2	2267.1	2264.3	2258.7	2246.7	2238.3	2230.4
10.5°	2234.6	2244.3	2253.2	2259.7	2261.5	2263.4	2260.1	2254.6	2242.0	2233.2	2224.8
11°	2229.5	2239.2	2249.0	2255.5	2257.3	2259.2	2256.4	2250.4	2237.4	2227.6	2219.2
11.5°	2224.3	2234.1	2244.3	2251.3	2253.2	2255.0	2251.8	2245.7	2232.2	2222.0	2213.2
12°	2217.8	2229.0	2239.2	2246.7	2249.0	2250.4	2247.6	2240.6	2226.7	2216.4	2206.7
12.5°	2212.3	2223.4	2234.1	2242.0	2244.3	2245.7	2242.5	2235.5	2220.6	2210.4	2200.2
13°	2205.8	2217.8	2228.5	2237.4	2239.2	2241.1	2237.8	2230.9	2215.1	2203.9	2193.2
13.5°	2199.7	2211.8	2223.0	2231.8	2234.1	2235.5	2232.2	2225.3	2209.0	2197.4	2186.2
14°	2192.7	2205.3	2217.4	2226.2	2228.5	2230.9	2227.1	2219.2	2202.5	2190.9	2179.3
14.5°	2185.8	2198.8	2210.9	2220.6	2223.0	2224.8	2221.1	2213.2	2196.5	2183.9	2171.4
15°	2178.3	2191.8	2204.4	2214.6	2217.4	2219.2	2215.1	2207.1	2189.5	2176.5	2163.5
15.5°	2170.9	2183.9	2198.3	2208.1	2211.3	2212.7	2208.5	2200.2	2182.5	2169.0	2156.0
16°	2163.0	2177.4	2191.3	2201.6	2204.8	2206.7	2202.0	2193.7	2175.1	2161.1	2148.1
16.5°	2155.1	2170.0	2183.9	2195.1	2197.9	2199.7	2195.5	2186.7	2167.6	2153.2	2139.3
17°	2147.2	2162.1	2176.9	2188.1	2191.3	2192.7	2188.6	2179.7	2159.7	2145.3	2130.5
17.5°	2138.4	2153.7	2169.5	2180.7	2183.9	2185.3	2181.1	2172.3	2151.4	2136.5	2121.2
18°	2129.1	2145.3	2161.1	2173.2	2176.5	2177.9	2173.7	2163.9	2143.0	2127.7	2111.9
18.5°	2120.2	2137.0	2152.8	2165.8	2168.6	2170.9	2165.8	2156.0	2135.1	2118.8	2102.6
19°	2110.9	2127.7	2144.9	2157.4	2161.1	2163.0	2157.4	2148.1	2126.3	2109.5	2093.3
19.5°	2101.6	2118.8	2136.0	2149.5	2153.2	2154.6	2149.1	2139.8	2117.5	2100.3	2083.1
20°	2091.9	2109.5	2127.2	2141.2	2145.3	2146.3	2140.7	2130.9	2107.7	2090.5	2072.8
20.5°	2081.7	2100.3	2118.4	2132.3	2136.5	2137.9	2131.9	2122.1	2098.9	2080.7	2062.1
21°	2071.4	2090.0	2109.1	2123.5	2128.1	2129.5	2123.0	2112.8	2088.6	2070.0	2051.5



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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°	2038.9	2059.4	2079.3	2095.1	2099.3	2100.7	2094.2	2084.0	2058.0	2038.0	2018.0
23°	2027.8	2048.7	2069.1	2085.4	2089.6	2091.0	2084.5	2073.8	2047.3	2027.3	2006.4
23.5°	2016.1	2037.0	2058.9	2075.6	2079.8	2080.3	2074.2	2063.1	2036.6	2015.7	1993.8
24°	2004.0	2025.9	2048.2	2064.9	2069.1	2070.5	2063.5	2052.8	2025.4	2004.0	1982.2
24.5°	1992.0	2014.7	2037.0	2054.2	2058.9	2059.4	2052.8	2041.7	2014.3	1992.4	1969.7
25°	1979.4	2003.1	2025.4	2043.1	2047.7	2048.7	2041.7	2030.5	2002.2	1979.9	1957.1
25.5°	1966.9	1991.0	2014.3	2032.4	2037.0	2037.5	2030.5	2019.4	1990.1	1967.8	1943.6
26°	1954.3	1978.5	2002.2	2020.8	2025.9	2026.4	2019.4	2007.8	1978.0	1954.8	1930.6
26.5°	1941.8	1965.9	1990.6	2009.2	2014.3	2014.3	2007.3	1995.7	1965.5	1941.8	1917.1
27°	1928.3	1953.4	1978.0	1997.5	2002.2	2002.7	1995.2	1983.6	1952.9	1929.2	1903.7
27.5°	1914.8	1940.4	1965.9	1985.9	1990.1	1990.6	1983.1	1971.1	1940.4	1915.7	1889.7
28°	1900.9	1927.4	1953.4	1973.4	1978.5	1979.0	1971.1	1958.5	1927.8	1902.3	1875.3
28.5°	1886.9	1913.4	1939.9	1960.8	1965.9	1965.9	1958.5	1945.5	1914.3	1888.8	1861.4
29°	1873.0	1899.9	1926.4	1947.8	1953.4	1952.9	1945.0	1932.9	1900.4	1874.4	1847.4
29.5°	1858.6	1886.0	1913.4	1935.3	1940.4	1939.9	1932.0	1919.9	1886.9	1860.4	1832.1
30°	1844.2	1872.5	1899.9	1922.3	1926.9	1926.9	1918.5	1906.0	1873.0	1846.0	1816.8
30.5°	1829.3	1858.1	1886.0	1908.8	1913.9	1912.5	1905.1	1892.5	1859.0	1831.6	1802.3
31°	1814.4	1843.7	1872.1	1894.4	1899.9	1899.0	1890.6	1878.6	1844.2	1816.8	1787.0
31.5°	1798.6	1828.8	1857.6	1880.9	1886.0	1885.1	1876.7	1864.6	1829.3	1801.4	1771.2
32°	1783.3	1814.0	1843.2	1866.9	1872.1	1871.1	1862.8	1850.2	1814.4	1786.5	1755.9
32.5°	1767.5	1798.2	1828.4	1852.5	1857.2	1856.3	1848.4	1835.8	1799.6	1770.7	1739.1
33°	1751.7	1782.8	1813.5	1837.7	1843.2	1841.4	1833.9	1820.9	1784.7	1755.4	1723.3
33.5°	1735.9	1767.0	1798.2	1823.3	1828.4	1826.5	1819.1	1805.6	1768.9	1739.6	1706.6
34°	1719.6	1751.7	1783.3	1807.9	1813.5	1812.1	1803.3	1790.7	1753.1	1722.9	1690.8
34.5°	1702.9	1735.4	1767.5	1793.0	1798.2	1796.3	1787.5	1774.9	1737.3	1706.6	1673.1
35°	1686.2	1719.2	1751.2	1776.8	1782.8	1781.0	1771.7	1758.7	1721.0	1689.9	1655.9
35.5°	1668.5	1702.4	1735.0	1761.4	1766.6	1765.2	1755.9	1742.9	1704.3	1672.7	1637.4
36°	1651.8	1685.7	1718.7	1744.7	1750.8	1748.9	1739.1	1726.6	1686.6	1654.5	1619.2
36.5°	1633.6	1668.5	1702.0	1728.4	1734.5	1732.2	1722.4	1709.4	1668.5	1636.0	1600.2
37°	1615.5	1650.8	1684.8	1711.2	1716.8	1714.5	1704.7	1691.7	1650.4	1617.4	1580.2
37.5°	1596.0	1631.8	1666.2	1693.1	1698.7	1696.4	1687.1	1673.6	1630.8	1596.9	1556.0
38°	1576.5	1612.7	1647.1	1675.0	1680.1	1677.8	1668.5	1654.5	1609.9	1574.6	1530.9
38.5°	1554.2	1591.3	1627.6	1655.5	1660.6	1657.8	1647.1	1634.6	1588.6	1550.4	1504.4
39°	1530.0	1567.6	1606.2	1636.0	1639.7	1636.0	1623.9	1612.7	1565.8	1524.9	1477.5
39.5°	1503.5	1541.6	1582.0	1614.6	1618.3	1611.8	1599.2	1589.0	1541.6	1498.9	1449.1
40°	1473.8	1514.2	1556.0	1591.8	1595.1	1586.2	1574.1	1563.5	1517.0	1471.0	1420.3
40.5°	1440.8	1486.3	1529.5	1567.6	1570.0	1560.7	1547.7	1537.4	1489.6	1442.6	1390.1
41°	1408.7	1457.5	1502.1	1541.6	1543.9	1533.7	1521.2	1510.5	1460.7	1413.8	1359.9
41.5°	1376.2	1427.7	1473.3	1514.2	1516.0	1506.8	1494.7	1482.1	1429.1	1383.6	1328.8
42°	1343.2	1396.1	1444.9	1484.4	1486.3	1478.9	1467.7	1453.3	1398.0	1352.9	1296.7
42.5°	1310.6	1364.5	1414.7	1453.8	1456.6	1451.0	1439.8	1424.5	1364.1	1321.3	1263.2
43°	1278.6	1332.5	1384.1	1422.6	1425.4	1422.2	1411.0	1392.9	1329.2	1288.3	1229.8
43.5°	1245.6	1299.5	1352.5	1389.6	1392.9	1392.4	1381.3	1362.2	1293.9	1254.4	1195.8



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
45°	1147.5	1198.6	1251.6	1283.7	1289.2	1299.5	1289.7	1263.7	1187.0	1150.3	1094.0
45.5°	1114.5	1164.2	1215.8	1245.6	1253.0	1267.4	1257.2	1230.7	1151.7	1114.5	1060.1
46°	1081.0	1130.8	1181.0	1208.8	1216.7	1233.9	1225.1	1195.4	1116.4	1077.3	1026.2
46.5°	1047.1	1096.4	1144.7	1172.1	1180.5	1200.9	1193.0	1161.9	1080.6	1040.6	991.8
47°	1012.2	1062.4	1108.9	1134.5	1143.3	1166.1	1159.1	1125.7	1046.6	1003.9	958.3
47.5°	977.4	1028.5	1072.7	1096.4	1107.5	1131.7	1126.1	1090.3	1012.2	967.6	923.9
48°	943.0	994.1	1034.6	1059.7	1072.2	1096.8	1091.3	1055.0	977.9	931.4	890.5
48.5°	908.1	959.3	997.4	1022.9	1036.9	1062.0	1057.8	1022.5	943.5	894.2	857.0
49°	874.2	925.8	959.7	986.7	1001.1	1026.7	1022.5	985.8	909.1	858.4	823.1
49.5°	840.3	891.4	923.0	950.4	965.8	990.9	988.5	950.9	874.7	822.6	789.2
50°	807.3	856.6	885.8	915.6	931.4	954.6	952.8	916.0	840.8	788.2	755.2
50.5°	773.8	821.7	849.1	878.9	896.5	918.8	917.4	882.1	806.8	752.9	720.8
51°	741.8	786.4	811.9	844.0	861.7	883.0	880.7	848.7	774.3	719.4	687.8
51.5°	708.8	752.4	776.6	808.7	827.3	847.7	846.8	815.2	740.4	686.0	654.8
52°	677.2	717.6	741.8	774.8	793.3	811.9	811.0	781.7	707.4	653.5	621.8
52.5°	646.0	684.1	707.8	739.0	759.0	777.1	775.7	747.8	675.3	621.4	589.3
53°	614.9	650.7	673.0	706.9	725.5	742.2	740.8	715.3	643.2	590.2	557.2
53.5°	583.7	617.7	639.5	673.4	692.5	707.8	706.4	682.7	611.2	559.1	526.1
54°	553.1	584.2	607.0	640.4	659.5	673.9	671.6	650.7	580.0	529.8	495.9
54.5°	523.3	551.7	574.9	606.5	626.5	640.0	637.7	618.6	549.8	501.9	466.6
55°	494.5	520.5	543.8	576.3	595.4	607.0	604.7	587.5	519.1	472.2	437.3
55.5°	465.7	488.9	512.6	545.6	564.2	574.4	570.7	555.9	489.4	443.4	410.8
56°	437.3	459.2	482.9	514.5	532.6	542.4	538.2	526.1	460.1	417.4	383.9
56.5°	409.5	429.9	453.6	483.4	501.9	510.3	506.6	495.0	432.7	391.3	357.4
57°	382.5	400.6	425.3	455.9	472.2	480.1	475.9	465.7	405.7	365.8	330.4
57.5°	356.0	372.7	397.4	427.1	443.4	449.9	445.7	437.3	378.8	339.7	305.8
58°	329.5	345.8	369.5	399.2	415.5	421.1	417.4	409.5	351.4	313.7	281.6
58.5°	304.9	319.8	343.0	372.3	387.6	392.3	388.5	381.1	324.4	290.5	258.9
59°	279.8	295.1	317.9	346.2	359.7	363.4	360.2	352.8	299.3	266.3	237.0
59.5°	256.5	271.0	293.3	321.1	332.3	334.6	331.8	324.9	276.1	244.5	216.1
60°	233.3	247.3	269.1	296.5	305.8	308.6	305.3	299.3	252.4	222.6	196.1
60.5°	211.9	225.4	245.9	273.3	281.2	283.0	280.3	274.2	229.6	202.2	176.1
61°	190.6	203.6	224.5	249.6	256.5	258.4	255.2	249.1	207.7	181.7	158.0
61.5°	170.6	183.6	203.1	227.3	232.8	234.2	231.5	225.9	187.8	163.1	141.3
62°	153.4	164.1	183.1	206.4	210.1	211.5	209.1	203.1	166.8	144.5	124.1
62.5°	136.6	148.3	164.1	185.4	187.8	189.6	187.3	180.3	147.8	127.3	108.8
63°	119.4	132.5	148.3	165.9	166.8	168.7	166.4	158.9	129.2	111.1	94.3
63.5°	102.7	116.7	132.5	148.7	146.9	148.7	146.4	139.4	112.0	96.2	81.3
64°	86.0	100.9	116.7	131.5	127.8	129.7	128.3	120.8	95.7	81.8	68.8
64.5°	72.5	85.5	100.9	114.8	109.7	112.0	110.6	103.2	80.9	68.8	57.6
65°	60.4	72.5	85.1	97.6	93.4	95.7	94.3	86.9	66.5	59.5	49.3
65.5°	50.2	60.9	72.0	80.9	78.1	79.9	79.0	72.5	55.8	49.7	41.4
66°	40.9	49.7	60.0	66.9	64.1	66.0	65.1	61.8	45.5	40.0	33.5



TEST NUMBER: P776561

CATALOG NUMBER: HCDJBL54050CSD-HCD41TRMB-5000lm-3000K

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
67.5°	20.0	24.6	31.1	33.0	34.9	36.3	35.3	30.7	13.9	15.3	12.5
68°	16.7	18.6	23.7	24.6	25.1	26.0	25.1	20.4	8.4	10.7	8.8
68.5°	13.9	14.9	17.2	18.1	15.8	16.3	15.3	13.9	5.6	7.0	6.5
69°	10.7	11.6	13.9	14.9	10.7	11.2	10.2	9.3	5.1	5.6	5.1
69.5°	7.9	8.4	11.2	11.6	7.4	7.4	7.0	6.5	5.1	5.1	5.1
70°	4.6	5.1	7.9	7.9	5.1	5.1	5.1	5.1	4.6	4.6	4.6
70.5°	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6
71°	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6	4.6
71.5°	4.2	4.2	4.2	4.6	4.2	4.2	4.6	4.6	4.6	4.6	4.6
72°	4.2	4.2	4.2	4.2	4.2	4.2	4.2	4.2	4.2	4.2	4.2
72.5°	4.2	4.2	4.2	4.2	4.2	4.2	4.2	4.2	4.2	4.2	4.2
73°	4.2	4.2	4.2	4.2	4.2	4.2	4.2	4.2	4.2	4.2	4.2
73.5°	3.7	3.7	3.7	3.7	3.7	3.7	4.2	4.2	3.7	3.7	4.2
74°	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7
74.5°	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7
75°	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7	3.7
75.5°	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.7	3.3	3.3	3.3
76°	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3
76.5°	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3
77°	3.3	3.3	3.3	3.3	3.3	3.3	3.3	3.3	2.8	2.8	3.3
77.5°	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8
78°	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8
78.5°	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.3	2.3	2.8
79°	2.3	2.3	2.8	2.8	2.8	2.8	2.8	2.8	2.3	2.3	2.3
79.5°	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3
80°	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	1.9	1.9	2.3
80.5°	1.9	2.3	2.3	2.3	2.3	2.3	2.3	2.3	1.9	1.9	2.3
81°	1.9	1.9	2.3	2.3	2.3	2.3	2.3	1.9	1.9	1.9	1.9
81.5°	1.9	1.9	1.9	2.3	1.9	1.9	1.9	1.9	1.4	1.4	1.9
82°	1.4	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.4	1.4	1.9
82.5°	1.4	1.4	1.9	1.9	1.9	1.9	1.9	1.4	0.9	1.4	1.4
83°	1.4	1.4	1.9	1.9	1.9	1.9	1.9	1.4	0.9	0.9	1.4
83.5°	0.9	1.4	1.4	1.4	1.4	1.4	1.4	1.4	0.9	0.9	1.4
84°	0.9	0.9	1.4	1.4	1.4	1.4	1.4	0.9	0.5	0.5	0.9
84.5°	0.5	0.9	1.4	1.4	1.4	1.4	1.4	0.9	0.5	0.5	0.9
85°	0.5	0.9	0.9	1.4	0.9	1.4	0.9	0.9	0.5	0.5	0.9
85.5°	0.5	0.5	0.9	0.9	0.9	0.9	0.9	0.5	0.0	0.5	0.9
86°	0.5	0.5	0.9	0.9	0.9	0.9	0.9	0.5	0.0	0.5	0.5
86.5°	0.0	0.5	0.9	0.9	0.5	0.9	0.9	0.5	0.0	0.5	0.5
87°	0.0	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.0	0.0	0.5
87.5°	0.0	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.0	0.0	0.0
88°	0.0	0.0	0.5	0.5	0.0	0.5	0.5	0.0	0.0	0.0	0.0
88.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0



TEST NUMBER: P776561

CATALOG NUMBER: HCDJBL4050CSD-HCD41TRMB-5000lm-3000K

CANDELA DISTRIBUTION (continued):

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



TEST NUMBER: P776561

CATALOG NUMBER: HCDJBL54050CSD-HCD41TRMB-5000lm-3000K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
0°	2291.3	2291.3	2291.3	2291.3	2291.3	2291.3
0.5°	2289.9	2289.9	2290.8	2290.3	2289.4	2290.8
1°	2288.5	2288.5	2289.4	2288.9	2288.5	2290.3
1.5°	2286.6	2286.6	2287.6	2287.6	2287.1	2289.4
2°	2285.2	2284.8	2285.2	2285.7	2284.8	2288.5
2.5°	2283.4	2282.4	2283.4	2282.9	2282.9	2286.6
3°	2281.0	2280.1	2280.6	2280.6	2281.0	2285.2
3.5°	2278.3	2277.8	2277.8	2278.3	2278.7	2283.4
4°	2275.5	2275.0	2275.0	2275.5	2276.4	2282.0
4.5°	2272.2	2271.8	2271.8	2272.2	2273.6	2279.7
5°	2269.0	2268.0	2268.0	2269.0	2270.4	2277.3
5.5°	2265.7	2264.8	2264.3	2265.2	2267.6	2274.5
6°	2262.0	2260.6	2260.1	2262.0	2263.8	2271.3
6.5°	2258.3	2256.9	2255.9	2257.8	2260.1	2268.0
7°	2254.1	2252.7	2252.2	2253.6	2256.4	2265.2
7.5°	2249.4	2248.0	2247.6	2249.0	2252.7	2261.5
8°	2244.8	2242.9	2242.9	2243.9	2248.0	2257.8
8.5°	2239.7	2238.3	2237.8	2239.2	2242.9	2253.6
9°	2234.6	2232.7	2232.2	2234.1	2237.8	2249.0
9.5°	2229.5	2227.1	2226.7	2228.5	2232.7	2244.3
10°	2223.9	2221.6	2220.6	2223.0	2227.1	2239.7
10.5°	2217.8	2216.0	2215.1	2217.4	2222.0	2234.6
11°	2211.8	2209.9	2209.0	2211.3	2215.5	2229.5
11.5°	2205.3	2203.0	2202.5	2204.4	2209.5	2224.3
12°	2198.8	2196.5	2195.5	2197.9	2203.4	2217.8
12.5°	2192.3	2189.5	2188.6	2190.9	2196.5	2212.3
13°	2184.8	2182.1	2180.7	2183.9	2189.5	2205.8
13.5°	2177.4	2174.6	2173.2	2176.5	2182.5	2199.7
14°	2170.0	2166.7	2165.8	2169.0	2175.1	2192.7
14.5°	2162.1	2158.8	2157.4	2161.1	2167.6	2185.8
15°	2153.7	2150.0	2149.1	2152.3	2159.3	2178.3
15.5°	2145.3	2141.6	2140.7	2143.9	2150.9	2170.9
16°	2136.5	2132.8	2132.3	2135.6	2142.5	2163.0
16.5°	2128.1	2124.0	2123.0	2126.7	2133.7	2155.1
17°	2118.8	2114.2	2113.3	2117.5	2124.9	2147.2
17.5°	2109.5	2104.9	2104.0	2108.2	2115.6	2138.4
18°	2099.8	2095.1	2094.2	2097.9	2106.8	2129.1
18.5°	2089.6	2084.9	2084.0	2088.2	2097.0	2120.2
19°	2079.8	2074.7	2073.3	2077.9	2086.3	2110.9
19.5°	2069.1	2064.0	2063.1	2067.3	2076.6	2101.6
20°	2058.4	2053.3	2052.4	2056.6	2066.8	2091.9
20.5°	2047.7	2042.2	2040.8	2045.4	2055.6	2081.7
21°	2036.6	2030.5	2029.6	2034.3	2044.5	2071.4

TEST NUMBER: P776561

CATALOG NUMBER: HCDJBL54050CSD-HCD41TRMB-5000lm-3000K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
22.5°	2001.3	1995.7	1993.8	1998.5	2010.6	2038.9
23°	1989.2	1983.6	1981.7	1986.9	1998.0	2027.8
23.5°	1976.6	1970.6	1969.2	1974.3	1985.5	2016.1
24°	1964.1	1957.6	1955.7	1961.8	1973.4	2004.0
24.5°	1951.1	1944.6	1942.7	1948.3	1960.8	1992.0
25°	1938.1	1931.5	1929.7	1935.3	1948.3	1979.4
25.5°	1924.6	1917.6	1915.7	1921.3	1934.8	1966.9
26°	1911.1	1903.7	1901.8	1907.8	1921.3	1954.3
26.5°	1896.7	1889.7	1887.9	1894.4	1907.4	1941.8
27°	1883.2	1875.3	1873.9	1880.0	1893.4	1928.3
27.5°	1868.3	1860.9	1859.0	1865.5	1879.5	1914.8
28°	1853.9	1845.6	1844.2	1850.7	1865.1	1900.9
28.5°	1839.1	1831.2	1829.3	1836.3	1850.2	1886.9
29°	1824.2	1816.3	1814.0	1820.9	1835.8	1873.0
29.5°	1808.4	1800.9	1798.6	1806.1	1820.9	1858.6
30°	1793.5	1784.7	1783.3	1790.3	1806.1	1844.2
30.5°	1777.2	1769.3	1767.0	1774.9	1790.3	1829.3
31°	1761.4	1753.1	1750.8	1758.2	1774.5	1814.4
31.5°	1745.6	1737.3	1734.5	1742.9	1759.1	1798.6
32°	1729.4	1720.5	1717.8	1727.1	1743.3	1783.3
32.5°	1712.6	1704.3	1702.0	1710.3	1727.5	1767.5
33°	1695.4	1687.5	1685.2	1693.1	1710.8	1751.7
33.5°	1678.7	1670.4	1668.0	1676.9	1693.6	1735.9
34°	1661.5	1652.7	1650.8	1660.1	1676.9	1719.6
34.5°	1644.3	1635.5	1633.2	1642.5	1660.1	1702.9
35°	1626.2	1617.4	1615.5	1624.3	1642.0	1686.2
35.5°	1607.1	1599.2	1597.4	1606.7	1625.3	1668.5
36°	1588.6	1579.7	1578.3	1588.6	1607.1	1651.8
36.5°	1568.6	1559.7	1558.8	1569.5	1587.6	1633.6
37°	1546.7	1538.8	1538.4	1548.6	1568.1	1615.5
37.5°	1521.2	1514.7	1515.6	1528.1	1548.6	1596.0
38°	1493.7	1487.7	1489.1	1503.0	1524.0	1576.5
38.5°	1465.4	1458.0	1461.2	1475.6	1497.9	1554.2
39°	1434.7	1428.2	1431.9	1447.3	1471.0	1530.0
39.5°	1403.1	1396.6	1401.3	1417.1	1442.2	1503.5
40°	1371.0	1364.1	1369.2	1385.9	1411.9	1473.8
40.5°	1338.5	1330.6	1336.2	1354.3	1379.4	1440.8
41°	1306.9	1297.6	1303.7	1322.7	1346.4	1408.7
41.5°	1274.8	1263.2	1269.7	1289.2	1311.6	1376.2
42°	1242.8	1231.6	1236.3	1256.2	1277.6	1343.2
42.5°	1211.6	1198.2	1202.3	1222.8	1243.2	1310.6
43°	1180.0	1166.1	1167.5	1188.4	1207.4	1278.6
43.5°	1148.9	1131.7	1132.6	1153.5	1172.6	1245.6



TEST NUMBER: P776561

CATALOG NUMBER: HCDJBL54050CSD-HCD41TRMB-5000lm-3000K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
45°	1052.2	1034.1	1027.6	1046.2	1069.9	1147.5
45.5°	1019.2	1000.6	992.7	1010.4	1035.0	1114.5
46°	985.8	968.6	959.7	974.6	1001.6	1081.0
46.5°	951.4	934.2	925.3	938.8	967.6	1047.1
47°	917.9	902.6	891.4	903.0	934.2	1012.2
47.5°	884.4	868.2	857.0	867.7	899.8	977.4
48°	850.5	837.0	825.0	832.9	866.3	943.0
48.5°	817.5	803.6	791.0	797.5	832.9	908.1
49°	785.0	772.0	759.0	764.1	799.9	874.2
49.5°	752.0	740.4	726.0	730.6	766.9	840.3
50°	719.4	708.8	693.9	697.1	733.9	807.3
50.5°	688.8	677.6	661.8	664.6	701.8	773.8
51°	657.6	646.5	631.1	633.5	670.2	741.8
51.5°	626.5	616.7	600.0	602.3	638.1	708.8
52°	595.4	587.0	570.3	572.1	607.9	677.2
52.5°	566.1	557.7	540.1	541.9	577.2	646.0
53°	535.9	528.0	511.7	513.6	547.5	614.9
53.5°	506.1	499.6	482.4	485.7	517.7	583.7
54°	476.8	471.3	455.0	457.8	488.9	553.1
54.5°	449.4	444.3	428.5	431.3	460.6	523.3
55°	422.5	417.8	402.5	405.7	433.6	494.5
55.5°	396.0	390.9	377.4	380.6	406.2	465.7
56°	369.5	364.8	352.3	356.5	379.7	437.3
56.5°	343.0	339.7	328.1	332.8	353.7	409.5
57°	316.5	315.1	305.3	309.5	329.5	382.5
57.5°	292.3	291.4	283.0	287.2	304.9	356.0
58°	268.2	267.7	261.7	266.3	282.1	329.5
58.5°	244.9	245.4	241.2	245.9	258.9	304.9
59°	222.6	224.0	221.2	225.9	238.0	279.8
59.5°	201.2	203.6	202.6	206.8	217.5	256.5
60°	181.3	184.0	184.5	189.2	198.0	233.3
60.5°	162.2	164.1	166.8	171.0	178.5	211.9
61°	144.1	148.3	152.0	156.6	160.3	190.6
61.5°	126.4	132.9	137.1	141.8	145.0	170.6
62°	110.1	117.1	122.2	126.9	129.2	153.4
62.5°	95.7	101.3	107.4	112.0	113.4	136.6
63°	81.8	86.0	92.5	97.1	98.1	119.4
63.5°	69.2	73.0	79.9	84.6	84.6	102.7
64°	57.6	61.3	68.3	73.0	72.5	86.0
64.5°	49.7	51.1	57.6	61.8	60.4	72.5
65°	42.3	41.8	48.3	51.6	50.7	60.4
65.5°	34.4	33.9	39.5	42.3	41.4	50.2
66°	27.0	27.0	31.1	34.4	33.0	40.9



TEST NUMBER: P776561

CATALOG NUMBER: HCDJBL54050CSD-HCD41TRMB-5000lm-3000K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
67.5°	10.7	13.5	14.9	14.9	14.9	20.0
68°	7.9	10.7	11.6	12.5	10.7	16.7
68.5°	6.0	7.9	8.4	9.8	9.8	13.9
69°	5.1	5.1	5.1	7.4	8.4	10.7
69.5°	5.1	5.1	4.6	5.1	7.0	7.9
70°	4.6	4.6	4.6	4.6	5.6	4.6
70.5°	4.6	4.6	4.6	4.6	4.6	4.6
71°	4.6	4.6	4.6	4.6	4.2	4.6
71.5°	4.2	4.2	4.2	4.2	4.2	4.2
72°	4.2	4.2	4.2	4.2	4.2	4.2
72.5°	4.2	4.2	4.2	4.2	4.2	4.2
73°	4.2	4.2	4.2	4.2	3.7	4.2
73.5°	3.7	3.7	3.7	3.7	3.7	3.7
74°	3.7	3.7	3.7	3.7	3.7	3.7
74.5°	3.7	3.7	3.7	3.7	3.7	3.7
75°	3.7	3.7	3.7	3.7	3.3	3.7
75.5°	3.3	3.3	3.3	3.3	3.3	3.3
76°	3.3	3.3	3.3	3.3	3.3	3.3
76.5°	3.3	3.3	3.3	3.3	3.3	3.3
77°	3.3	3.3	3.3	3.3	2.8	3.3
77.5°	2.8	2.8	2.8	2.8	2.8	2.8
78°	2.8	2.8	2.8	2.8	2.8	2.8
78.5°	2.8	2.8	2.8	2.8	2.3	2.8
79°	2.8	2.8	2.8	2.3	2.3	2.3
79.5°	2.3	2.3	2.3	2.3	2.3	2.3
80°	2.3	2.3	2.3	2.3	1.9	2.3
80.5°	2.3	2.3	2.3	2.3	1.9	1.9
81°	1.9	2.3	2.3	1.9	1.9	1.9
81.5°	1.9	1.9	1.9	1.9	1.4	1.9
82°	1.9	1.9	1.9	1.9	1.4	1.4
82.5°	1.9	1.9	1.9	1.4	1.4	1.4
83°	1.4	1.4	1.4	1.4	0.9	1.4
83.5°	1.4	1.4	1.4	1.4	0.9	0.9
84°	1.4	1.4	1.4	1.4	0.9	0.9
84.5°	0.9	0.9	0.9	0.9	0.5	0.5
85°	0.9	0.9	0.9	0.9	0.5	0.5
85.5°	0.9	0.9	0.9	0.9	0.5	0.5
86°	0.5	0.5	0.5	0.5	0.5	0.5
86.5°	0.5	0.5	0.5	0.5	0.5	0.0
87°	0.5	0.5	0.5	0.5	0.0	0.0
87.5°	0.0	0.0	0.0	0.0	0.0	0.0
88°	0.0	0.0	0.0	0.0	0.0	0.0
88.5°	0.0	0.0	0.0	0.0	0.0	0.0



TEST NUMBER: P776561

CATALOG NUMBER: HCDJBL54050CSD-HCD41TRMB-5000lm-3000K

CANDELA DISTRIBUTION (continued):

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



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

Scaled Data Report





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

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Peachtree City, GA 30269

Scaled Data Report



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Peachtree City, GA 30269

Scaled Data Report





21.5°	2060.7	2080.3	2099.8	2114.2	2118.4	2119.8	2113.3	2103.5	2078.9	2059.8	2040.8
22°	2050.1	2070.0	2089.6	2104.9	2109.1	2110.0	2104.4	2094.2	2068.2	2049.6	2029.6



44°	1213.5	1266.5	1319.5	1354.8	1359.9	1362.2	1351.5	1330.1	1258.6	1220.0	1162.4
44.5°	1180.5	1232.1	1285.1	1319.5	1324.1	1331.5	1321.8	1299.0	1222.3	1185.6	1128.4



66.5°	32.5	40.4	49.3	54.4	54.4	56.2	54.8	51.6	34.9	30.7	25.1
67°	26.0	32.1	39.5	42.8	44.6	46.0	45.1	40.9	24.6	20.9	17.2



89°	0.0	0.0	0.0	0.0	0.0	0.0	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	0.0	0.0	0.0	0.0	0.0	0.0

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21.5°	2025.0	2019.4	2017.5	2022.6	2032.9	2060.7
22°	2013.3	2007.8	2005.9	2010.6	2021.7	2050.1



44°	1116.4	1099.6	1097.3	1117.7	1138.2	1213.5
44.5°	1084.8	1066.2	1062.4	1082.0	1104.3	1180.5



66.5°	19.5	21.4	24.2	27.0	25.6	32.5
67°	14.9	16.3	18.1	20.4	20.0	26.0

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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)