

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: P776347

Luminaire Tested: HCDJBL3040CSD-HCD61TRH-HCD61TRLWW-4000lm-3500K

Issue Date: 2/13/2024

Test Information

Test Method: LM-79-2019
Report Number: P776347
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (A2312156B041)
Test Lab:
Issue Date: 2/13/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: HALO COMMERCIAL
Catalog Number: HCDJBS3040CSD-HCD61TRH-HCD61TRLWW-4000lm-3500K
Description: 6 INCH ROUND SHALLOW-WIDE LENSED WALLWASH KIT
Light Source: SELECTABLE LUMENS AND CCT ARRAY 90CRI / 3500K CCT
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 4813.4 lumens
Efficiency: N/A
Efficacy: 125.0 lumens/watt
Spacing Criteria (0/90/45): 1.17 / 1.16 / 1.25
Luminous Opening: Circular (Dia: 0.5' x H: 0')
CIE Type: Direct

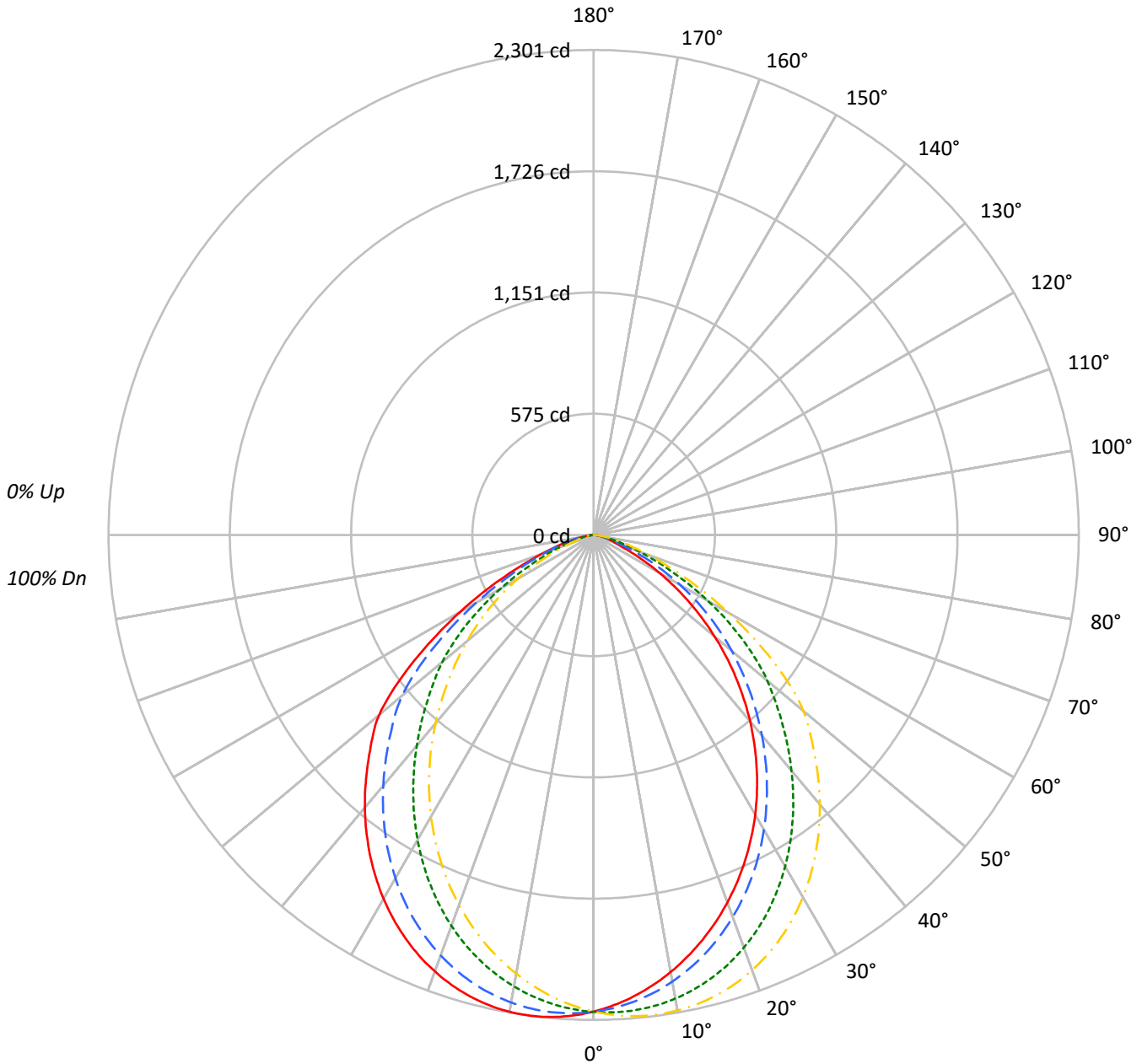
Input Watts (W): 38.5
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT



TEST NUMBER: P776347

CATALOG NUMBER: HCDJBL3040CSD-HCD61TRH-HCD61TRLWW-4000lm-3500K

Luminous Intensity Polar Plot





TEST NUMBER: P776347

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COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

| | | | | | | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----|----|----|---|
| RF | 20 | | | | | 20 | | | | | 20 | | | | | 20 | | | | | 20 | |
| RC | 80 | | | | | 70 | | | | | 50 | | | | | 30 | | | | | 10 | 0 |
| RW | 70 | 50 | 30 | 10 | 70 | 50 | 30 | 10 | 50 | 30 | 10 | 50 | 30 | 10 | 50 | 30 | 10 | 50 | 30 | 10 | 0 | |
| RCR | | | | | | | | | | | | | | | | | | | | | | |
| 0 | 119 | 119 | 119 | 119 | 116 | 116 | 116 | 116 | 111 | 111 | 111 | 106 | 106 | 106 | 102 | 102 | 102 | 100 | | | | |
| 1 | 111 | 107 | 103 | 100 | 108 | 105 | 101 | 99 | 100 | 98 | 95 | 97 | 94 | 93 | 93 | 91 | 90 | 88 | | | | |
| 2 | 102 | 95 | 89 | 84 | 100 | 93 | 88 | 83 | 90 | 85 | 82 | 87 | 83 | 80 | 84 | 81 | 78 | 76 | | | | |
| 3 | 94 | 85 | 78 | 72 | 92 | 83 | 77 | 71 | 81 | 75 | 70 | 78 | 73 | 69 | 75 | 71 | 68 | 66 | | | | |
| 4 | 87 | 76 | 68 | 62 | 85 | 75 | 68 | 62 | 72 | 66 | 61 | 70 | 65 | 60 | 68 | 63 | 60 | 58 | | | | |
| 5 | 80 | 69 | 61 | 55 | 78 | 68 | 60 | 54 | 66 | 59 | 54 | 64 | 58 | 53 | 62 | 57 | 53 | 51 | | | | |
| 6 | 75 | 62 | 54 | 48 | 73 | 61 | 54 | 48 | 60 | 53 | 48 | 58 | 52 | 47 | 57 | 51 | 47 | 45 | | | | |
| 7 | 69 | 57 | 49 | 43 | 68 | 56 | 48 | 43 | 55 | 48 | 43 | 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 | 44 | 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° | 124020 | 124020 | 124020 | 124020 |
| 5° | 120905 | 124559 | 126353 | 122942 |
| 10° | 117193 | 124341 | 127898 | 121107 |
| 15° | 112969 | 123389 | 128639 | 118514 |
| 20° | 108241 | 121548 | 128572 | 115125 |
| 25° | 102925 | 118761 | 127780 | 110831 |
| 30° | 96971 | 114954 | 126178 | 105750 |
| 35° | 90206 | 110149 | 123821 | 99863 |
| 40° | 82555 | 104481 | 120805 | 93389 |
| 45° | 73845 | 98095 | 117159 | 86567 |
| 50° | 63853 | 91639 | 113293 | 79912 |
| 55° | 52452 | 82033 | 99170 | 69694 |
| 60° | 39646 | 68536 | 80257 | 55895 |
| 65° | 26034 | 52574 | 60045 | 41237 |
| 70° | 17263 | 36817 | 41465 | 27777 |
| 75° | 13810 | 23744 | 28785 | 17601 |
| 80° | 10165 | 14554 | 17300 | 10418 |
| 85° | 5472 | 8491 | 3774 | 5975 |

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 157.5°
 Vertical Angle: 45°
 Luminance: 117966 cd/sqm



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ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10° | 213.1 | 4.4 |
| 10°-20° | 599.7 | 12.5 |
| 20°-30° | 875.1 | 18.2 |
| 30°-40° | 990.4 | 20.6 |
| 40°-50° | 937.1 | 19.5 |
| 50°-60° | 711.5 | 14.8 |
| 60°-70° | 356.4 | 7.4 |
| 70°-80° | 112.9 | 2.3 |
| 80°-90° | 17.1 | 0.4 |
| 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° | 1687.9 | 35.1 |
| 0°-40° | 2678.3 | 55.6 |
| 0°-60° | 4326.9 | 89.9 |
| 0°-90° | 4813.4 | 100.0 |
| 90°-120° | 0.0 | 0.0 |
| 90°-150° | 0.0 | 0.0 |
| 90°-180° | 0.0 | 0.0 |
| 0°-180° | 4813.4 | 100.0 |

CANDELA DISTRIBUTION:

| | 0° | 90° | 180° | 270° | 360° | Flux |
|-----|------|------|------|------|------|------|
| 0° | 2262 | 2262 | 2262 | 2262 | 2262 | |
| 5° | 2197 | 2264 | 2296 | 2234 | 2197 | 207 |
| 15° | 1990 | 2174 | 2267 | 2088 | 1990 | 559 |
| 25° | 1702 | 1963 | 2112 | 1832 | 1702 | 782 |
| 35° | 1348 | 1646 | 1850 | 1492 | 1348 | 841 |
| 45° | 952 | 1265 | 1511 | 1117 | 952 | 733 |
| 55° | 549 | 858 | 1038 | 729 | 549 | 491 |
| 65° | 201 | 405 | 463 | 318 | 201 | 208 |
| 75° | 65 | 112 | 136 | 83 | 65 | 70 |
| 85° | 9 | 14 | 6 | 10 | 9 | 12 |
| 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° | 2262.3 | 2262.3 | 2262.3 | 2262.3 | 2262.3 | 2262.3 | 2262.3 | 2262.3 | 2262.3 | 2262.3 | 2262.3 |
| 0.5° | 2256.7 | 2258.3 | 2259.9 | 2261.1 | 2264.7 | 2265.1 | 2265.9 | 2266.3 | 2266.6 | 2266.6 | 2265.1 |
| 1° | 2251.2 | 2253.9 | 2256.7 | 2260.3 | 2265.9 | 2267.8 | 2269.8 | 2271.0 | 2271.0 | 2270.2 | 2267.0 |
| 1.5° | 2245.6 | 2249.2 | 2253.5 | 2258.7 | 2266.6 | 2270.6 | 2273.8 | 2275.4 | 2275.4 | 2273.4 | 2269.0 |
| 2° | 2239.6 | 2244.0 | 2250.0 | 2257.1 | 2267.0 | 2272.6 | 2277.0 | 2279.4 | 2279.0 | 2276.6 | 2270.2 |
| 2.5° | 2232.9 | 2238.4 | 2246.0 | 2255.1 | 2267.0 | 2274.6 | 2280.2 | 2282.9 | 2282.9 | 2279.4 | 2271.8 |
| 3° | 2226.5 | 2232.9 | 2241.6 | 2252.7 | 2267.0 | 2276.2 | 2283.3 | 2286.5 | 2285.7 | 2281.4 | 2272.6 |
| 3.5° | 2219.8 | 2226.9 | 2237.2 | 2250.0 | 2266.6 | 2277.8 | 2285.7 | 2289.7 | 2288.9 | 2283.3 | 2273.0 |
| 4° | 2212.2 | 2220.6 | 2232.5 | 2247.2 | 2265.9 | 2278.6 | 2288.1 | 2292.5 | 2291.7 | 2285.3 | 2273.4 |
| 4.5° | 2205.1 | 2213.8 | 2227.3 | 2244.0 | 2265.1 | 2279.4 | 2290.1 | 2295.3 | 2294.1 | 2286.5 | 2273.4 |
| 5° | 2197.1 | 2207.0 | 2221.7 | 2240.4 | 2263.5 | 2279.8 | 2291.7 | 2297.2 | 2296.1 | 2287.7 | 2273.0 |
| 5.5° | 2189.2 | 2199.5 | 2216.2 | 2236.4 | 2261.9 | 2280.2 | 2292.9 | 2299.2 | 2297.6 | 2288.5 | 2272.6 |
| 6° | 2180.8 | 2191.9 | 2209.8 | 2232.5 | 2259.9 | 2279.8 | 2294.1 | 2300.8 | 2298.8 | 2288.9 | 2271.4 |
| 6.5° | 2172.5 | 2184.4 | 2203.9 | 2228.1 | 2257.9 | 2279.4 | 2294.9 | 2302.0 | 2300.0 | 2288.9 | 2270.2 |
| 7° | 2163.7 | 2176.4 | 2197.1 | 2223.3 | 2255.1 | 2278.6 | 2295.3 | 2302.8 | 2300.4 | 2288.9 | 2268.6 |
| 7.5° | 2154.6 | 2168.1 | 2190.4 | 2218.2 | 2252.3 | 2277.4 | 2295.3 | 2303.2 | 2300.8 | 2288.1 | 2266.6 |
| 8° | 2145.1 | 2159.4 | 2183.2 | 2212.6 | 2249.2 | 2276.2 | 2295.3 | 2303.6 | 2300.8 | 2287.3 | 2264.7 |
| 8.5° | 2135.5 | 2150.6 | 2175.6 | 2207.0 | 2246.0 | 2274.6 | 2294.9 | 2303.6 | 2300.4 | 2286.1 | 2261.9 |
| 9° | 2126.0 | 2141.9 | 2167.7 | 2201.1 | 2242.0 | 2273.0 | 2293.7 | 2303.2 | 2300.0 | 2284.9 | 2259.1 |
| 9.5° | 2115.6 | 2132.3 | 2159.8 | 2195.1 | 2238.0 | 2270.6 | 2292.9 | 2302.4 | 2298.8 | 2282.9 | 2256.3 |
| 10° | 2105.3 | 2122.8 | 2151.8 | 2188.4 | 2233.7 | 2268.2 | 2291.3 | 2301.2 | 2297.6 | 2281.0 | 2252.7 |
| 10.5° | 2095.0 | 2112.9 | 2143.1 | 2181.6 | 2229.3 | 2265.1 | 2289.7 | 2300.0 | 2296.1 | 2278.2 | 2249.2 |
| 11° | 2084.3 | 2102.9 | 2133.9 | 2174.5 | 2224.1 | 2261.9 | 2287.7 | 2298.4 | 2293.7 | 2275.8 | 2245.2 |
| 11.5° | 2073.1 | 2092.6 | 2124.8 | 2166.9 | 2219.0 | 2258.7 | 2285.3 | 2296.1 | 2291.7 | 2272.6 | 2240.8 |
| 12° | 2062.0 | 2081.9 | 2115.6 | 2159.0 | 2213.4 | 2254.7 | 2282.5 | 2294.1 | 2288.9 | 2269.4 | 2236.4 |
| 12.5° | 2050.5 | 2071.1 | 2105.7 | 2151.4 | 2207.8 | 2250.8 | 2279.4 | 2291.3 | 2286.1 | 2265.9 | 2231.3 |
| 13° | 2039.0 | 2060.0 | 2095.8 | 2142.7 | 2201.5 | 2246.4 | 2276.2 | 2288.1 | 2282.9 | 2261.9 | 2226.1 |
| 13.5° | 2027.0 | 2048.9 | 2085.4 | 2134.3 | 2195.1 | 2242.0 | 2272.6 | 2284.9 | 2279.0 | 2257.5 | 2221.0 |
| 14° | 2015.1 | 2037.4 | 2075.1 | 2125.6 | 2188.4 | 2236.8 | 2268.6 | 2281.4 | 2275.4 | 2252.7 | 2215.0 |
| 14.5° | 2002.8 | 2025.8 | 2064.4 | 2116.4 | 2181.2 | 2231.7 | 2264.3 | 2277.4 | 2271.0 | 2248.0 | 2209.0 |
| 15° | 1990.5 | 2013.5 | 2053.3 | 2106.5 | 2174.1 | 2225.7 | 2259.9 | 2273.0 | 2266.6 | 2242.8 | 2202.7 |
| 15.5° | 1977.8 | 2001.2 | 2041.7 | 2097.0 | 2166.1 | 2220.2 | 2255.1 | 2268.6 | 2261.9 | 2237.2 | 2195.9 |
| 16° | 1965.0 | 1988.9 | 2030.6 | 2086.6 | 2158.2 | 2213.8 | 2250.0 | 2263.5 | 2256.3 | 2231.3 | 2188.8 |
| 16.5° | 1951.9 | 1976.2 | 2018.7 | 2076.7 | 2150.2 | 2207.4 | 2244.4 | 2258.3 | 2251.2 | 2225.3 | 2181.6 |
| 17° | 1938.4 | 1963.4 | 2006.4 | 2065.6 | 2141.9 | 2200.7 | 2238.8 | 2253.1 | 2245.2 | 2219.0 | 2174.1 |
| 17.5° | 1925.3 | 1950.3 | 1994.0 | 2054.8 | 2132.7 | 2193.5 | 2232.5 | 2247.2 | 2239.2 | 2212.2 | 2166.5 |
| 18° | 1911.4 | 1936.8 | 1981.7 | 2043.7 | 2123.2 | 2186.4 | 2226.1 | 2240.8 | 2232.5 | 2205.1 | 2158.2 |
| 18.5° | 1897.9 | 1923.7 | 1968.6 | 2032.2 | 2114.1 | 2178.4 | 2219.4 | 2234.5 | 2226.1 | 2197.5 | 2149.8 |
| 19° | 1883.6 | 1909.8 | 1955.9 | 2020.3 | 2104.1 | 2170.5 | 2212.2 | 2227.7 | 2219.0 | 2190.0 | 2141.1 |
| 19.5° | 1869.3 | 1896.3 | 1942.4 | 2008.0 | 2094.2 | 2162.1 | 2205.1 | 2220.6 | 2211.4 | 2182.4 | 2131.9 |
| 20° | 1855.4 | 1882.0 | 1929.3 | 1996.0 | 2083.5 | 2153.4 | 2197.9 | 2213.0 | 2203.9 | 2174.1 | 2122.8 |
| 20.5° | 1840.3 | 1867.7 | 1915.4 | 1983.3 | 2072.7 | 2144.3 | 2190.0 | 2205.5 | 2195.9 | 2165.3 | 2112.9 |
| 21° | 1825.6 | 1853.0 | 1901.5 | 1970.6 | 2062.0 | 2135.5 | 2181.6 | 2197.5 | 2188.0 | 2156.6 | 2103.3 |



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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° | 1780.7 | 1808.5 | 1858.1 | 1930.1 | 2027.4 | 2105.7 | 2155.0 | 2172.1 | 2161.7 | 2128.8 | 2072.3 |
| 23° | 1765.2 | 1793.0 | 1843.4 | 1916.2 | 2015.1 | 2095.4 | 2145.8 | 2162.9 | 2152.2 | 2118.8 | 2061.2 |
| 23.5° | 1749.7 | 1777.9 | 1828.7 | 1901.9 | 2002.8 | 2084.6 | 2136.3 | 2153.4 | 2142.7 | 2108.5 | 2050.1 |
| 24° | 1733.8 | 1762.4 | 1813.2 | 1887.5 | 1990.1 | 2073.5 | 2126.0 | 2143.9 | 2133.1 | 2097.8 | 2038.6 |
| 24.5° | 1717.5 | 1746.5 | 1797.3 | 1872.4 | 1977.0 | 2062.0 | 2115.6 | 2133.9 | 2122.4 | 2087.0 | 2026.6 |
| 25° | 1701.6 | 1730.2 | 1781.8 | 1857.7 | 1963.4 | 2050.9 | 2105.3 | 2123.6 | 2112.5 | 2076.3 | 2014.7 |
| 25.5° | 1685.3 | 1714.3 | 1766.3 | 1842.6 | 1949.9 | 2038.6 | 2094.6 | 2113.3 | 2101.3 | 2065.2 | 2002.4 |
| 26° | 1669.0 | 1698.0 | 1750.5 | 1827.1 | 1936.4 | 2026.2 | 2083.5 | 2102.5 | 2090.6 | 2053.3 | 1990.1 |
| 26.5° | 1652.3 | 1681.7 | 1733.4 | 1811.3 | 1922.1 | 2013.9 | 2071.9 | 2091.0 | 2079.1 | 2041.7 | 1977.4 |
| 27° | 1635.6 | 1665.0 | 1717.5 | 1795.8 | 1907.4 | 2001.2 | 2060.0 | 2079.9 | 2068.0 | 2029.4 | 1964.2 |
| 27.5° | 1618.5 | 1647.9 | 1700.8 | 1779.5 | 1893.1 | 1988.1 | 2048.5 | 2068.4 | 2056.0 | 2017.5 | 1951.1 |
| 28° | 1601.4 | 1630.8 | 1684.1 | 1763.2 | 1878.0 | 1974.6 | 2036.2 | 2056.4 | 2043.7 | 2005.2 | 1937.2 |
| 28.5° | 1584.3 | 1613.8 | 1666.6 | 1746.5 | 1862.9 | 1961.1 | 2023.5 | 2044.1 | 2031.4 | 1992.1 | 1923.7 |
| 29° | 1567.3 | 1597.1 | 1649.5 | 1730.2 | 1847.8 | 1947.6 | 2010.7 | 2032.2 | 2018.7 | 1978.9 | 1909.8 |
| 29.5° | 1549.8 | 1579.6 | 1632.4 | 1713.5 | 1831.9 | 1932.9 | 1998.0 | 2019.1 | 2006.0 | 1965.8 | 1895.5 |
| 30° | 1531.9 | 1561.7 | 1615.3 | 1696.4 | 1816.0 | 1918.9 | 1984.5 | 2006.4 | 1993.3 | 1952.3 | 1880.8 |
| 30.5° | 1514.0 | 1544.2 | 1597.1 | 1678.9 | 1800.1 | 1903.8 | 1970.6 | 1993.3 | 1980.1 | 1938.4 | 1866.1 |
| 31° | 1496.1 | 1526.3 | 1579.6 | 1661.8 | 1783.8 | 1888.7 | 1956.7 | 1980.1 | 1966.6 | 1924.5 | 1851.4 |
| 31.5° | 1478.2 | 1508.5 | 1561.3 | 1644.0 | 1767.1 | 1873.2 | 1942.8 | 1966.2 | 1952.3 | 1910.2 | 1835.9 |
| 32° | 1460.0 | 1490.6 | 1543.4 | 1626.1 | 1750.1 | 1858.5 | 1928.5 | 1952.3 | 1938.8 | 1895.9 | 1820.8 |
| 32.5° | 1441.7 | 1472.3 | 1525.1 | 1608.6 | 1733.4 | 1842.6 | 1914.2 | 1938.0 | 1924.9 | 1881.2 | 1805.3 |
| 33° | 1423.0 | 1453.6 | 1507.3 | 1590.7 | 1716.7 | 1826.4 | 1899.1 | 1923.7 | 1910.2 | 1866.5 | 1789.8 |
| 33.5° | 1404.7 | 1435.3 | 1488.6 | 1572.0 | 1699.2 | 1810.5 | 1884.0 | 1909.4 | 1895.5 | 1851.4 | 1774.3 |
| 34° | 1386.1 | 1417.1 | 1470.3 | 1554.1 | 1681.7 | 1794.2 | 1868.5 | 1894.7 | 1880.4 | 1835.9 | 1757.6 |
| 34.5° | 1367.0 | 1398.4 | 1451.2 | 1535.5 | 1663.4 | 1777.1 | 1853.0 | 1879.2 | 1865.3 | 1820.4 | 1741.3 |
| 35° | 1347.9 | 1379.3 | 1432.9 | 1516.8 | 1645.9 | 1760.4 | 1837.5 | 1864.1 | 1850.2 | 1804.9 | 1725.0 |
| 35.5° | 1329.2 | 1360.6 | 1413.5 | 1498.5 | 1628.1 | 1743.7 | 1821.2 | 1848.6 | 1835.1 | 1789.4 | 1708.7 |
| 36° | 1310.2 | 1341.6 | 1395.2 | 1479.8 | 1609.8 | 1726.2 | 1805.3 | 1833.1 | 1819.6 | 1773.1 | 1691.6 |
| 36.5° | 1291.1 | 1322.5 | 1376.1 | 1460.8 | 1591.5 | 1708.7 | 1789.0 | 1817.2 | 1803.3 | 1757.6 | 1675.0 |
| 37° | 1271.6 | 1303.0 | 1356.3 | 1441.7 | 1572.8 | 1691.2 | 1772.3 | 1800.9 | 1787.4 | 1740.9 | 1657.9 |
| 37.5° | 1252.1 | 1283.9 | 1337.6 | 1422.6 | 1554.1 | 1673.4 | 1755.2 | 1784.6 | 1771.1 | 1724.6 | 1640.4 |
| 38° | 1232.3 | 1264.5 | 1318.5 | 1403.5 | 1535.9 | 1655.5 | 1738.5 | 1768.3 | 1754.8 | 1707.5 | 1622.9 |
| 38.5° | 1213.2 | 1245.4 | 1299.0 | 1384.5 | 1516.8 | 1637.2 | 1721.0 | 1751.6 | 1738.5 | 1691.2 | 1606.2 |
| 39° | 1194.1 | 1225.5 | 1280.0 | 1365.0 | 1498.1 | 1618.9 | 1704.0 | 1735.0 | 1721.4 | 1674.2 | 1588.3 |
| 39.5° | 1173.9 | 1206.4 | 1260.5 | 1345.9 | 1479.4 | 1600.6 | 1686.5 | 1717.9 | 1705.2 | 1657.1 | 1570.8 |
| 40° | 1153.6 | 1186.6 | 1241.4 | 1326.5 | 1460.0 | 1582.0 | 1668.6 | 1700.8 | 1688.1 | 1640.0 | 1552.6 |
| 40.5° | 1134.1 | 1166.7 | 1221.1 | 1307.0 | 1440.1 | 1563.7 | 1650.7 | 1683.3 | 1670.6 | 1622.9 | 1535.1 |
| 41° | 1114.3 | 1146.8 | 1202.1 | 1287.5 | 1421.0 | 1544.2 | 1632.4 | 1665.8 | 1653.5 | 1605.0 | 1516.8 |
| 41.5° | 1094.0 | 1127.4 | 1182.2 | 1267.6 | 1402.4 | 1525.5 | 1614.6 | 1648.3 | 1636.4 | 1587.9 | 1498.9 |
| 42° | 1073.7 | 1107.1 | 1162.7 | 1248.6 | 1382.1 | 1506.5 | 1596.3 | 1630.4 | 1618.5 | 1570.0 | 1480.6 |
| 42.5° | 1053.8 | 1087.6 | 1143.7 | 1229.1 | 1363.4 | 1487.8 | 1578.0 | 1612.6 | 1601.0 | 1552.6 | 1462.4 |
| 43° | 1034.0 | 1067.8 | 1123.8 | 1209.6 | 1343.5 | 1468.7 | 1559.3 | 1594.7 | 1583.2 | 1534.3 | 1444.1 |
| 43.5° | 1013.7 | 1047.9 | 1104.3 | 1190.1 | 1324.5 | 1449.6 | 1541.0 | 1576.8 | 1565.7 | 1516.4 | 1425.8 |



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CATALOG NUMBER: HCDJBL3040CSD-HCD61TRH-HCD61TRLWW-4000lm-3500K

CANDELA DISTRIBUTION (continued):

| | 0° | 22.5° | 45° | 67.5° | 90° | 112.5° | 135° | 157.5° | 180° | 202.5° | 225° |
|-------|-------|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 45° | 952.5 | 987.9 | 1045.5 | 1131.7 | 1265.3 | 1391.6 | 1484.2 | 1521.6 | 1511.2 | 1462.4 | 1370.6 |
| 45.5° | 932.3 | 968.4 | 1026.8 | 1112.7 | 1247.0 | 1372.1 | 1465.5 | 1503.3 | 1493.3 | 1444.1 | 1352.3 |
| 46° | 912.0 | 948.1 | 1007.0 | 1093.2 | 1226.7 | 1352.3 | 1446.5 | 1485.0 | 1475.1 | 1426.6 | 1334.4 |
| 46.5° | 890.9 | 928.7 | 987.9 | 1074.1 | 1207.2 | 1333.6 | 1428.2 | 1467.1 | 1458.0 | 1409.1 | 1316.9 |
| 47° | 870.3 | 908.4 | 968.4 | 1055.0 | 1187.8 | 1314.5 | 1409.9 | 1449.2 | 1440.9 | 1392.0 | 1299.4 |
| 47.5° | 850.4 | 888.5 | 949.3 | 1036.0 | 1169.5 | 1295.9 | 1392.0 | 1432.2 | 1423.4 | 1374.5 | 1281.5 |
| 48° | 830.1 | 869.1 | 929.9 | 1016.9 | 1150.0 | 1277.6 | 1373.7 | 1414.7 | 1406.3 | 1357.4 | 1264.5 |
| 48.5° | 809.9 | 849.2 | 910.8 | 998.6 | 1131.7 | 1259.3 | 1356.3 | 1397.2 | 1388.8 | 1339.6 | 1246.2 |
| 49° | 789.2 | 829.7 | 891.7 | 979.9 | 1112.7 | 1240.2 | 1337.6 | 1378.9 | 1370.6 | 1320.5 | 1227.5 |
| 49.5° | 769.3 | 810.3 | 873.0 | 961.3 | 1093.6 | 1221.5 | 1318.9 | 1360.6 | 1351.1 | 1300.2 | 1206.8 |
| 50° | 748.7 | 790.4 | 854.4 | 941.8 | 1074.5 | 1202.1 | 1298.6 | 1339.2 | 1328.4 | 1278.0 | 1186.2 |
| 50.5° | 728.4 | 770.9 | 834.9 | 923.5 | 1055.4 | 1181.0 | 1276.4 | 1316.1 | 1304.6 | 1252.9 | 1162.7 |
| 51° | 707.3 | 751.8 | 816.2 | 904.0 | 1035.2 | 1158.8 | 1253.3 | 1290.7 | 1276.4 | 1226.7 | 1139.3 |
| 51.5° | 687.9 | 732.4 | 797.5 | 884.6 | 1014.1 | 1136.9 | 1229.1 | 1264.1 | 1249.4 | 1199.7 | 1113.5 |
| 52° | 667.6 | 712.9 | 778.5 | 865.1 | 993.4 | 1113.1 | 1202.9 | 1235.5 | 1221.1 | 1171.5 | 1086.8 |
| 52.5° | 647.7 | 693.8 | 759.8 | 844.8 | 971.2 | 1088.8 | 1175.8 | 1206.0 | 1190.9 | 1142.1 | 1059.4 |
| 53° | 627.9 | 674.7 | 740.7 | 825.0 | 948.5 | 1064.2 | 1147.6 | 1176.2 | 1161.9 | 1112.7 | 1032.4 |
| 53.5° | 608.0 | 655.7 | 721.2 | 804.7 | 926.7 | 1038.7 | 1119.0 | 1146.4 | 1130.5 | 1082.5 | 1004.2 |
| 54° | 587.7 | 636.6 | 702.2 | 783.6 | 903.6 | 1012.5 | 1090.8 | 1116.6 | 1099.2 | 1052.3 | 976.4 |
| 54.5° | 568.3 | 617.5 | 683.1 | 763.8 | 881.8 | 987.1 | 1061.4 | 1085.6 | 1068.2 | 1022.1 | 948.1 |
| 55° | 548.8 | 598.9 | 664.0 | 743.9 | 858.3 | 960.9 | 1032.4 | 1055.4 | 1037.6 | 991.9 | 920.3 |
| 55.5° | 528.9 | 580.2 | 644.2 | 723.2 | 835.7 | 934.6 | 1002.2 | 1024.8 | 1005.8 | 960.9 | 891.3 |
| 56° | 510.2 | 561.1 | 625.1 | 702.6 | 812.2 | 907.2 | 972.8 | 993.8 | 974.0 | 929.5 | 863.1 |
| 56.5° | 490.8 | 542.0 | 606.0 | 681.9 | 789.2 | 880.2 | 942.6 | 962.8 | 943.4 | 899.3 | 834.5 |
| 57° | 471.7 | 523.3 | 586.5 | 661.2 | 765.4 | 853.2 | 913.6 | 931.5 | 912.0 | 869.5 | 806.7 |
| 57.5° | 452.6 | 504.7 | 567.1 | 640.6 | 742.7 | 826.5 | 883.4 | 900.9 | 881.4 | 838.5 | 778.1 |
| 58° | 434.3 | 486.4 | 548.4 | 619.9 | 718.9 | 799.1 | 855.2 | 870.3 | 851.6 | 808.3 | 750.3 |
| 58.5° | 416.1 | 467.7 | 528.9 | 599.6 | 695.4 | 772.5 | 825.4 | 840.1 | 821.0 | 778.9 | 722.8 |
| 59° | 397.4 | 449.8 | 510.2 | 578.6 | 671.6 | 745.5 | 795.9 | 809.9 | 790.8 | 750.3 | 695.0 |
| 59.5° | 379.5 | 431.6 | 491.2 | 558.3 | 648.9 | 718.9 | 767.3 | 779.7 | 761.0 | 720.8 | 667.6 |
| 60° | 361.6 | 413.7 | 472.9 | 538.4 | 625.1 | 692.6 | 738.7 | 750.3 | 732.0 | 692.6 | 641.8 |
| 60.5° | 343.7 | 395.4 | 454.2 | 518.2 | 602.0 | 666.0 | 709.7 | 721.2 | 703.4 | 664.8 | 615.1 |
| 61° | 326.2 | 378.3 | 435.5 | 497.9 | 578.6 | 640.6 | 681.9 | 692.6 | 674.7 | 638.2 | 589.7 |
| 61.5° | 309.6 | 360.8 | 417.6 | 478.0 | 556.3 | 615.5 | 654.5 | 664.0 | 646.9 | 611.6 | 565.1 |
| 62° | 292.5 | 343.7 | 400.2 | 458.6 | 533.3 | 590.9 | 628.3 | 636.6 | 619.5 | 585.7 | 540.8 |
| 62.5° | 275.8 | 326.6 | 381.9 | 439.1 | 511.4 | 565.9 | 600.0 | 608.8 | 592.5 | 560.3 | 516.6 |
| 63° | 259.9 | 310.4 | 364.4 | 419.6 | 489.2 | 540.8 | 573.8 | 581.8 | 566.7 | 534.9 | 493.1 |
| 63.5° | 244.4 | 293.7 | 346.9 | 400.6 | 467.7 | 517.8 | 548.0 | 555.5 | 539.6 | 511.0 | 470.9 |
| 64° | 228.9 | 277.8 | 329.4 | 381.5 | 446.3 | 493.5 | 523.7 | 530.1 | 513.0 | 488.8 | 449.4 |
| 64.5° | 214.6 | 262.3 | 312.3 | 362.8 | 425.6 | 470.5 | 498.7 | 504.7 | 487.6 | 465.7 | 428.4 |
| 65° | 200.7 | 247.2 | 295.6 | 344.5 | 405.3 | 448.2 | 474.5 | 480.8 | 462.9 | 443.9 | 407.7 |
| 65.5° | 186.8 | 231.7 | 279.0 | 327.0 | 385.9 | 426.4 | 451.4 | 457.0 | 437.5 | 422.0 | 388.2 |
| 66° | 174.1 | 217.4 | 262.3 | 308.8 | 366.4 | 404.5 | 429.2 | 433.5 | 413.7 | 401.4 | 369.2 |



TEST NUMBER: P776347

CATALOG NUMBER: HCDJBL3040CSD-HCD61TRH-HCD61TRLWW-4000lm-3500K

CANDELA DISTRIBUTION (continued):

| | 0° | 22.5° | 45° | 67.5° | 90° | 112.5° | 135° | 157.5° | 180° | 202.5° | 225° |
|-------|-------|-------|-------|-------|-------|--------|-------|--------|-------|--------|-------|
| 67.5° | 140.7 | 175.2 | 215.4 | 258.3 | 311.5 | 346.1 | 366.0 | 369.2 | 349.7 | 344.5 | 317.9 |
| 68° | 133.5 | 162.1 | 200.7 | 242.8 | 293.3 | 327.8 | 347.7 | 350.1 | 330.6 | 326.2 | 300.8 |
| 68.5° | 126.0 | 149.8 | 186.4 | 226.9 | 277.0 | 309.6 | 329.4 | 331.4 | 311.1 | 308.0 | 283.7 |
| 69° | 118.8 | 139.9 | 172.9 | 212.2 | 260.7 | 291.3 | 311.1 | 312.7 | 291.7 | 290.1 | 268.6 |
| 69.5° | 111.3 | 130.3 | 159.7 | 197.1 | 244.8 | 273.8 | 292.5 | 294.1 | 274.6 | 273.8 | 253.5 |
| 70° | 107.7 | 120.8 | 147.8 | 184.0 | 229.7 | 257.9 | 276.2 | 278.2 | 258.7 | 258.3 | 239.2 |
| 70.5° | 103.7 | 110.9 | 138.3 | 170.9 | 215.4 | 242.8 | 261.1 | 262.7 | 243.6 | 244.0 | 226.1 |
| 71° | 99.3 | 101.3 | 128.8 | 158.2 | 201.9 | 228.1 | 246.0 | 247.6 | 229.3 | 229.7 | 213.0 |
| 71.5° | 95.0 | 97.0 | 118.8 | 146.6 | 188.4 | 213.8 | 231.3 | 232.9 | 215.4 | 216.2 | 200.3 |
| 72° | 90.2 | 93.0 | 109.3 | 137.1 | 175.6 | 201.1 | 217.8 | 219.8 | 202.3 | 203.1 | 188.4 |
| 72.5° | 85.8 | 89.0 | 99.7 | 127.6 | 163.3 | 188.0 | 205.0 | 206.6 | 189.9 | 191.1 | 176.8 |
| 73° | 81.5 | 84.6 | 92.2 | 118.0 | 152.2 | 176.0 | 192.7 | 194.7 | 178.0 | 178.8 | 165.7 |
| 73.5° | 77.1 | 80.7 | 85.4 | 108.1 | 141.5 | 164.5 | 180.4 | 182.8 | 167.3 | 168.1 | 155.4 |
| 74° | 73.1 | 76.7 | 79.5 | 98.5 | 131.1 | 153.8 | 169.7 | 171.7 | 156.2 | 157.4 | 145.4 |
| 74.5° | 68.7 | 72.7 | 74.3 | 91.0 | 121.2 | 143.1 | 159.0 | 160.9 | 145.8 | 147.0 | 135.9 |
| 75° | 65.2 | 68.7 | 69.5 | 83.8 | 112.1 | 133.1 | 149.0 | 150.6 | 135.9 | 137.5 | 126.4 |
| 75.5° | 61.2 | 65.2 | 65.6 | 77.1 | 103.7 | 124.0 | 139.1 | 141.1 | 126.4 | 128.0 | 117.6 |
| 76° | 57.6 | 61.2 | 61.6 | 71.1 | 95.4 | 114.8 | 129.5 | 131.5 | 116.8 | 118.8 | 109.3 |
| 76.5° | 54.0 | 57.6 | 58.4 | 65.2 | 87.8 | 106.5 | 120.8 | 122.4 | 108.1 | 110.5 | 101.3 |
| 77° | 50.5 | 54.0 | 54.8 | 60.0 | 80.7 | 98.5 | 112.1 | 114.0 | 99.3 | 102.1 | 93.8 |
| 77.5° | 47.3 | 50.9 | 51.7 | 55.2 | 73.9 | 91.0 | 104.1 | 105.7 | 91.4 | 94.2 | 86.6 |
| 78° | 43.7 | 47.3 | 48.5 | 50.9 | 67.6 | 83.8 | 96.2 | 97.8 | 83.4 | 86.6 | 79.5 |
| 78.5° | 40.9 | 44.1 | 45.3 | 46.5 | 61.6 | 76.7 | 88.6 | 90.2 | 75.5 | 79.9 | 72.7 |
| 79° | 37.8 | 40.9 | 42.5 | 42.5 | 56.0 | 70.3 | 81.5 | 82.7 | 68.3 | 72.7 | 66.4 |
| 79.5° | 35.0 | 37.8 | 39.7 | 38.9 | 50.9 | 64.0 | 74.7 | 75.9 | 61.6 | 66.4 | 60.4 |
| 80° | 32.2 | 35.0 | 37.0 | 35.8 | 46.1 | 58.0 | 68.0 | 69.1 | 54.8 | 60.0 | 54.4 |
| 80.5° | 29.4 | 32.2 | 34.2 | 32.6 | 41.7 | 52.5 | 61.6 | 62.8 | 48.1 | 54.0 | 48.9 |
| 81° | 26.6 | 29.4 | 31.4 | 29.8 | 37.8 | 47.3 | 55.6 | 56.8 | 42.5 | 48.5 | 43.7 |
| 81.5° | 24.2 | 27.0 | 29.0 | 27.4 | 34.2 | 42.5 | 49.7 | 50.9 | 37.4 | 43.3 | 39.3 |
| 82° | 21.9 | 24.2 | 26.6 | 25.0 | 30.6 | 38.1 | 44.1 | 45.7 | 31.8 | 38.9 | 35.0 |
| 82.5° | 19.5 | 21.9 | 24.2 | 22.7 | 27.0 | 34.2 | 39.7 | 40.9 | 26.2 | 34.6 | 30.6 |
| 83° | 17.1 | 19.5 | 21.9 | 20.7 | 23.4 | 30.2 | 35.4 | 36.6 | 21.1 | 30.2 | 26.2 |
| 83.5° | 14.7 | 17.1 | 19.5 | 18.7 | 20.7 | 26.2 | 31.0 | 32.2 | 16.7 | 25.4 | 21.9 |
| 84° | 12.7 | 14.7 | 17.5 | 16.7 | 17.9 | 22.3 | 26.2 | 27.4 | 12.3 | 21.1 | 18.7 |
| 84.5° | 10.7 | 12.7 | 15.5 | 14.7 | 15.5 | 19.1 | 21.9 | 23.0 | 8.7 | 17.5 | 15.5 |
| 85° | 8.7 | 10.7 | 13.5 | 13.1 | 13.5 | 15.9 | 18.3 | 18.7 | 6.0 | 14.3 | 12.7 |
| 85.5° | 6.8 | 8.7 | 11.9 | 11.5 | 11.5 | 13.5 | 15.1 | 15.1 | 4.0 | 11.1 | 9.9 |
| 86° | 5.2 | 7.2 | 9.9 | 9.9 | 9.5 | 10.7 | 12.3 | 11.5 | 2.8 | 8.3 | 7.6 |
| 86.5° | 4.4 | 5.6 | 7.9 | 7.9 | 7.9 | 8.7 | 9.5 | 8.7 | 2.4 | 6.0 | 5.6 |
| 87° | 3.2 | 4.4 | 6.4 | 6.4 | 6.4 | 6.8 | 7.2 | 6.4 | 1.6 | 4.0 | 4.0 |
| 87.5° | 2.4 | 3.2 | 4.8 | 4.8 | 5.2 | 5.2 | 5.2 | 4.4 | 1.2 | 2.4 | 2.4 |
| 88° | 1.6 | 2.4 | 3.2 | 3.6 | 4.0 | 3.6 | 3.2 | 2.4 | 0.8 | 1.2 | 1.2 |
| 88.5° | 0.8 | 1.2 | 2.0 | 2.0 | 2.4 | 2.0 | 1.6 | 1.2 | 0.4 | 0.4 | 0.4 |



TEST NUMBER: P776347

CATALOG NUMBER: HCDJBL3040CSD-HCD61TRH-HCD61TRLWW-4000lm-3500K

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: P776347

CATALOG NUMBER: HCDJBL3040CSD-HCD61TRH-HCD61TRLWW-4000lm-3500K

CANDELA DISTRIBUTION (continued):

| | 247.5° | 270° | 292.5° | 315° | 337.5° | 360° |
|-------|--------|--------|--------|--------|--------|--------|
| 0° | 2262.3 | 2262.3 | 2262.3 | 2262.3 | 2262.3 | 2262.3 |
| 0.5° | 2262.7 | 2261.9 | 2258.7 | 2256.7 | 2255.9 | 2256.7 |
| 1° | 2263.1 | 2259.9 | 2254.7 | 2251.9 | 2250.4 | 2251.2 |
| 1.5° | 2262.7 | 2257.5 | 2251.2 | 2246.4 | 2244.4 | 2245.6 |
| 2° | 2262.7 | 2255.1 | 2246.8 | 2240.8 | 2238.0 | 2239.6 |
| 2.5° | 2261.9 | 2252.3 | 2242.0 | 2235.3 | 2231.7 | 2232.9 |
| 3° | 2261.1 | 2249.2 | 2237.2 | 2228.9 | 2224.9 | 2226.5 |
| 3.5° | 2259.9 | 2245.6 | 2232.1 | 2222.5 | 2218.2 | 2219.8 |
| 4° | 2258.3 | 2242.0 | 2226.9 | 2215.8 | 2211.0 | 2212.2 |
| 4.5° | 2256.3 | 2238.0 | 2221.3 | 2208.6 | 2203.1 | 2205.1 |
| 5° | 2254.3 | 2234.1 | 2215.4 | 2201.5 | 2195.1 | 2197.1 |
| 5.5° | 2251.9 | 2229.3 | 2209.0 | 2193.9 | 2187.2 | 2189.2 |
| 6° | 2249.2 | 2224.5 | 2202.3 | 2186.0 | 2178.8 | 2180.8 |
| 6.5° | 2246.0 | 2219.4 | 2195.5 | 2178.0 | 2170.1 | 2172.5 |
| 7° | 2242.8 | 2214.2 | 2188.8 | 2169.7 | 2160.9 | 2163.7 |
| 7.5° | 2238.8 | 2208.2 | 2181.2 | 2160.9 | 2151.8 | 2154.6 |
| 8° | 2235.3 | 2202.3 | 2173.7 | 2152.2 | 2142.7 | 2145.1 |
| 8.5° | 2230.9 | 2196.3 | 2165.3 | 2143.1 | 2132.7 | 2135.5 |
| 9° | 2226.5 | 2189.6 | 2157.4 | 2133.9 | 2122.8 | 2126.0 |
| 9.5° | 2221.7 | 2182.4 | 2148.6 | 2124.0 | 2112.5 | 2115.6 |
| 10° | 2216.6 | 2175.6 | 2139.9 | 2114.1 | 2102.1 | 2105.3 |
| 10.5° | 2211.0 | 2168.1 | 2130.7 | 2104.1 | 2091.8 | 2095.0 |
| 11° | 2205.5 | 2160.5 | 2121.6 | 2093.8 | 2081.1 | 2084.3 |
| 11.5° | 2199.5 | 2152.2 | 2112.1 | 2083.1 | 2069.9 | 2073.1 |
| 12° | 2193.5 | 2143.9 | 2102.1 | 2072.3 | 2058.4 | 2062.0 |
| 12.5° | 2186.8 | 2135.5 | 2091.8 | 2060.8 | 2046.9 | 2050.5 |
| 13° | 2180.0 | 2126.8 | 2081.5 | 2049.7 | 2035.4 | 2039.0 |
| 13.5° | 2172.9 | 2117.2 | 2071.1 | 2038.2 | 2023.1 | 2027.0 |
| 14° | 2165.3 | 2108.1 | 2060.0 | 2026.6 | 2011.1 | 2015.1 |
| 14.5° | 2157.8 | 2098.2 | 2048.9 | 2014.7 | 1998.8 | 2002.8 |
| 15° | 2149.4 | 2088.2 | 2037.8 | 2002.4 | 1986.1 | 1990.5 |
| 15.5° | 2141.1 | 2078.3 | 2025.8 | 1989.7 | 1973.4 | 1977.8 |
| 16° | 2132.7 | 2067.6 | 2013.9 | 1977.0 | 1960.7 | 1965.0 |
| 16.5° | 2124.0 | 2056.8 | 2001.6 | 1964.2 | 1947.2 | 1951.9 |
| 17° | 2114.9 | 2045.7 | 1989.3 | 1951.1 | 1934.0 | 1938.4 |
| 17.5° | 2105.3 | 2034.6 | 1976.6 | 1937.6 | 1920.1 | 1925.3 |
| 18° | 2095.4 | 2022.7 | 1963.8 | 1924.1 | 1906.6 | 1911.4 |
| 18.5° | 2085.4 | 2010.7 | 1950.3 | 1910.2 | 1892.7 | 1897.9 |
| 19° | 2075.1 | 1998.4 | 1937.2 | 1896.3 | 1878.4 | 1883.6 |
| 19.5° | 2064.4 | 1986.1 | 1923.7 | 1882.0 | 1864.1 | 1869.3 |
| 20° | 2053.7 | 1973.4 | 1909.8 | 1868.1 | 1849.8 | 1855.4 |
| 20.5° | 2042.5 | 1960.7 | 1895.5 | 1853.4 | 1835.1 | 1840.3 |
| 21° | 2031.0 | 1947.2 | 1881.2 | 1838.3 | 1820.0 | 1825.6 |



TEST NUMBER: P776347

CATALOG NUMBER: HCDJBL3040CSD-HCD61TRH-HCD61TRLWW-4000lm-3500K

CANDELA DISTRIBUTION (continued):

| | 247.5° | 270° | 292.5° | 315° | 337.5° | 360° |
|-------|--------|--------|--------|--------|--------|--------|
| 22.5° | 1995.2 | 1906.2 | 1836.7 | 1793.0 | 1774.7 | 1780.7 |
| 23° | 1982.5 | 1891.5 | 1821.6 | 1777.5 | 1759.2 | 1765.2 |
| 23.5° | 1970.2 | 1877.6 | 1806.5 | 1762.0 | 1743.7 | 1749.7 |
| 24° | 1957.1 | 1862.5 | 1790.6 | 1746.1 | 1727.4 | 1733.8 |
| 24.5° | 1943.6 | 1847.8 | 1775.1 | 1730.2 | 1711.1 | 1717.5 |
| 25° | 1930.1 | 1832.3 | 1758.8 | 1713.9 | 1695.2 | 1701.6 |
| 25.5° | 1916.2 | 1817.2 | 1742.9 | 1697.2 | 1678.9 | 1685.3 |
| 26° | 1902.3 | 1802.1 | 1726.2 | 1680.5 | 1662.2 | 1669.0 |
| 26.5° | 1887.5 | 1785.8 | 1710.3 | 1664.2 | 1645.5 | 1652.3 |
| 27° | 1873.2 | 1769.5 | 1693.2 | 1647.5 | 1628.9 | 1635.6 |
| 27.5° | 1858.9 | 1753.6 | 1676.5 | 1630.4 | 1611.8 | 1618.5 |
| 28° | 1843.8 | 1737.3 | 1659.1 | 1613.0 | 1594.3 | 1601.4 |
| 28.5° | 1829.1 | 1721.0 | 1642.4 | 1595.9 | 1577.6 | 1584.3 |
| 29° | 1813.2 | 1704.0 | 1624.9 | 1578.4 | 1559.7 | 1567.3 |
| 29.5° | 1797.7 | 1687.3 | 1607.4 | 1560.9 | 1542.2 | 1549.8 |
| 30° | 1781.8 | 1670.6 | 1589.9 | 1543.0 | 1524.3 | 1531.9 |
| 30.5° | 1766.3 | 1653.1 | 1572.0 | 1525.1 | 1506.9 | 1514.0 |
| 31° | 1750.1 | 1635.6 | 1553.8 | 1507.3 | 1488.6 | 1496.1 |
| 31.5° | 1733.4 | 1618.1 | 1536.3 | 1489.0 | 1470.7 | 1478.2 |
| 32° | 1716.7 | 1600.2 | 1518.0 | 1470.7 | 1452.0 | 1460.0 |
| 32.5° | 1700.4 | 1582.8 | 1499.7 | 1452.4 | 1434.1 | 1441.7 |
| 33° | 1683.3 | 1565.3 | 1481.4 | 1434.1 | 1415.5 | 1423.0 |
| 33.5° | 1666.2 | 1547.0 | 1463.1 | 1415.5 | 1397.2 | 1404.7 |
| 34° | 1649.1 | 1528.7 | 1444.5 | 1396.8 | 1378.5 | 1386.1 |
| 34.5° | 1631.6 | 1510.4 | 1425.4 | 1378.1 | 1359.8 | 1367.0 |
| 35° | 1614.2 | 1492.2 | 1406.7 | 1359.0 | 1340.4 | 1347.9 |
| 35.5° | 1596.7 | 1473.5 | 1388.4 | 1340.0 | 1322.1 | 1329.2 |
| 36° | 1579.2 | 1455.6 | 1369.4 | 1321.3 | 1303.0 | 1310.2 |
| 36.5° | 1561.3 | 1436.5 | 1350.7 | 1302.2 | 1283.5 | 1291.1 |
| 37° | 1543.0 | 1417.8 | 1331.2 | 1282.7 | 1264.5 | 1271.6 |
| 37.5° | 1525.1 | 1399.6 | 1312.5 | 1263.7 | 1245.4 | 1252.1 |
| 38° | 1506.9 | 1380.5 | 1293.1 | 1244.2 | 1225.9 | 1232.3 |
| 38.5° | 1488.6 | 1361.4 | 1274.4 | 1225.1 | 1206.4 | 1213.2 |
| 39° | 1470.3 | 1343.1 | 1255.3 | 1206.0 | 1187.0 | 1194.1 |
| 39.5° | 1452.0 | 1324.1 | 1236.2 | 1186.6 | 1167.5 | 1173.9 |
| 40° | 1433.3 | 1305.0 | 1216.8 | 1166.7 | 1147.6 | 1153.6 |
| 40.5° | 1415.1 | 1286.3 | 1197.7 | 1147.6 | 1128.2 | 1134.1 |
| 41° | 1396.4 | 1266.8 | 1178.6 | 1128.2 | 1107.9 | 1114.3 |
| 41.5° | 1377.7 | 1248.2 | 1159.2 | 1108.7 | 1088.0 | 1094.0 |
| 42° | 1359.0 | 1229.5 | 1140.1 | 1089.2 | 1068.6 | 1073.7 |
| 42.5° | 1340.4 | 1210.8 | 1121.4 | 1069.7 | 1048.7 | 1053.8 |
| 43° | 1322.1 | 1192.1 | 1102.3 | 1050.3 | 1028.8 | 1034.0 |
| 43.5° | 1303.0 | 1172.7 | 1083.7 | 1030.8 | 1008.9 | 1013.7 |

TEST NUMBER: P776347

CATALOG NUMBER: HCDJBL3040CSD-HCD61TRH-HCD61TRLWW-4000lm-3500K

CANDELA DISTRIBUTION (continued):

| | 247.5° | 270° | 292.5° | 315° | 337.5° | 360° |
|-------|--------|--------|--------|-------|--------|-------|
| 45° | 1247.4 | 1116.6 | 1026.4 | 972.8 | 949.3 | 952.5 |
| 45.5° | 1228.7 | 1098.0 | 1007.8 | 953.3 | 929.1 | 932.3 |
| 46° | 1210.4 | 1080.1 | 989.5 | 934.6 | 909.2 | 912.0 |
| 46.5° | 1192.5 | 1062.2 | 971.2 | 915.2 | 889.3 | 890.9 |
| 47° | 1174.7 | 1044.3 | 952.5 | 896.1 | 869.5 | 870.3 |
| 47.5° | 1156.8 | 1026.0 | 934.2 | 877.0 | 850.0 | 850.4 |
| 48° | 1139.7 | 1009.3 | 916.4 | 857.9 | 830.1 | 830.1 |
| 48.5° | 1122.2 | 991.5 | 898.1 | 839.3 | 809.9 | 809.9 |
| 49° | 1103.9 | 973.6 | 880.6 | 821.0 | 790.4 | 789.2 |
| 49.5° | 1084.4 | 955.7 | 863.1 | 802.3 | 770.9 | 769.3 |
| 50° | 1064.6 | 937.0 | 845.2 | 783.6 | 751.0 | 748.7 |
| 50.5° | 1043.5 | 917.5 | 826.5 | 765.4 | 732.0 | 728.4 |
| 51° | 1022.1 | 898.1 | 808.7 | 747.1 | 712.1 | 707.3 |
| 51.5° | 999.8 | 877.8 | 790.4 | 728.8 | 693.0 | 687.9 |
| 52° | 977.2 | 857.5 | 771.7 | 710.9 | 674.0 | 667.6 |
| 52.5° | 953.3 | 836.5 | 752.6 | 692.2 | 654.5 | 647.7 |
| 53° | 929.9 | 815.4 | 733.6 | 674.0 | 635.8 | 627.9 |
| 53.5° | 904.8 | 794.0 | 714.5 | 655.3 | 616.7 | 608.0 |
| 54° | 879.8 | 772.5 | 695.0 | 637.4 | 598.1 | 587.7 |
| 54.5° | 854.8 | 751.0 | 675.5 | 618.7 | 579.4 | 568.3 |
| 55° | 830.1 | 729.2 | 655.7 | 600.0 | 561.1 | 548.8 |
| 55.5° | 804.3 | 706.5 | 636.2 | 581.4 | 542.0 | 528.9 |
| 56° | 778.9 | 684.7 | 616.3 | 563.1 | 523.7 | 510.2 |
| 56.5° | 753.8 | 662.8 | 596.9 | 544.4 | 505.5 | 490.8 |
| 57° | 728.8 | 640.6 | 576.6 | 526.1 | 487.2 | 471.7 |
| 57.5° | 703.4 | 618.3 | 556.7 | 507.1 | 468.9 | 452.6 |
| 58° | 678.7 | 596.5 | 537.3 | 489.2 | 451.4 | 434.3 |
| 58.5° | 654.5 | 574.6 | 517.8 | 470.5 | 433.1 | 416.1 |
| 59° | 629.4 | 552.8 | 498.3 | 452.2 | 415.3 | 397.4 |
| 59.5° | 605.6 | 530.9 | 478.8 | 434.3 | 397.8 | 379.5 |
| 60° | 581.8 | 509.8 | 459.8 | 416.5 | 380.3 | 361.6 |
| 60.5° | 558.3 | 488.8 | 440.7 | 398.6 | 362.8 | 343.7 |
| 61° | 534.9 | 468.1 | 422.0 | 381.1 | 345.7 | 326.2 |
| 61.5° | 512.2 | 448.2 | 403.3 | 364.0 | 329.0 | 309.6 |
| 62° | 490.8 | 428.4 | 385.1 | 346.9 | 312.7 | 292.5 |
| 62.5° | 468.5 | 408.9 | 367.2 | 329.8 | 296.4 | 275.8 |
| 63° | 447.1 | 389.4 | 349.7 | 313.1 | 280.5 | 259.9 |
| 63.5° | 426.0 | 371.2 | 332.2 | 296.8 | 264.7 | 244.4 |
| 64° | 405.7 | 352.9 | 315.1 | 280.5 | 249.6 | 228.9 |
| 64.5° | 386.3 | 335.4 | 298.4 | 264.7 | 234.5 | 214.6 |
| 65° | 367.2 | 317.9 | 282.1 | 249.2 | 220.5 | 200.7 |
| 65.5° | 349.3 | 301.2 | 266.2 | 233.7 | 206.2 | 186.8 |
| 66° | 331.8 | 284.5 | 250.3 | 219.0 | 192.7 | 174.1 |



TEST NUMBER: P776347

CATALOG NUMBER: HCDJBL3040CSD-HCD61TRH-HCD61TRLWW-4000lm-3500K

CANDELA DISTRIBUTION (continued):

| | 247.5° | 270° | 292.5° | 315° | 337.5° | 360° |
|-------|--------|-------|--------|-------|--------|-------|
| 67.5° | 280.9 | 238.8 | 206.6 | 176.8 | 154.6 | 140.7 |
| 68° | 265.4 | 224.5 | 192.7 | 164.5 | 143.5 | 133.5 |
| 68.5° | 250.7 | 211.0 | 180.0 | 152.2 | 134.7 | 126.0 |
| 69° | 236.4 | 197.9 | 166.9 | 140.3 | 126.4 | 118.8 |
| 69.5° | 222.9 | 185.6 | 155.0 | 131.1 | 118.0 | 111.3 |
| 70° | 209.8 | 173.3 | 144.2 | 122.0 | 109.3 | 107.7 |
| 70.5° | 197.5 | 161.7 | 135.1 | 112.9 | 100.9 | 103.7 |
| 71° | 185.2 | 151.0 | 126.0 | 103.7 | 97.0 | 99.3 |
| 71.5° | 174.1 | 140.3 | 116.8 | 96.6 | 93.4 | 95.0 |
| 72° | 162.9 | 131.5 | 107.7 | 90.2 | 89.4 | 90.2 |
| 72.5° | 152.6 | 122.8 | 98.5 | 84.2 | 85.0 | 85.8 |
| 73° | 142.3 | 114.0 | 91.0 | 78.7 | 80.7 | 81.5 |
| 73.5° | 132.7 | 104.9 | 84.2 | 73.9 | 76.7 | 77.1 |
| 74° | 123.6 | 97.4 | 77.9 | 69.9 | 72.7 | 73.1 |
| 74.5° | 115.2 | 89.8 | 71.9 | 66.4 | 68.7 | 68.7 |
| 75° | 106.9 | 83.1 | 66.8 | 63.2 | 65.2 | 65.2 |
| 75.5° | 98.9 | 76.3 | 61.6 | 59.6 | 61.2 | 61.2 |
| 76° | 91.4 | 70.3 | 57.2 | 56.4 | 57.6 | 57.6 |
| 76.5° | 84.6 | 64.4 | 52.9 | 53.2 | 54.0 | 54.0 |
| 77° | 77.9 | 58.8 | 48.9 | 50.1 | 50.9 | 50.5 |
| 77.5° | 71.5 | 54.0 | 45.3 | 46.9 | 47.7 | 47.3 |
| 78° | 65.2 | 48.9 | 41.7 | 44.1 | 44.5 | 43.7 |
| 78.5° | 59.6 | 44.5 | 38.5 | 41.3 | 41.3 | 40.9 |
| 79° | 54.0 | 40.5 | 35.8 | 38.5 | 38.1 | 37.8 |
| 79.5° | 49.3 | 36.6 | 33.0 | 35.8 | 35.4 | 35.0 |
| 80° | 44.5 | 33.0 | 30.6 | 33.0 | 32.6 | 32.2 |
| 80.5° | 39.7 | 29.8 | 28.6 | 30.6 | 29.8 | 29.4 |
| 81° | 36.2 | 26.6 | 26.2 | 28.2 | 27.0 | 26.6 |
| 81.5° | 32.6 | 23.8 | 24.2 | 25.8 | 24.6 | 24.2 |
| 82° | 28.6 | 21.5 | 21.9 | 23.4 | 21.9 | 21.9 |
| 82.5° | 25.0 | 19.1 | 19.9 | 21.1 | 19.5 | 19.5 |
| 83° | 21.1 | 16.7 | 17.9 | 19.1 | 17.1 | 17.1 |
| 83.5° | 18.3 | 14.7 | 15.9 | 17.1 | 14.7 | 14.7 |
| 84° | 15.5 | 12.7 | 14.3 | 15.1 | 13.1 | 12.7 |
| 84.5° | 13.1 | 11.1 | 12.3 | 13.1 | 11.1 | 10.7 |
| 85° | 10.7 | 9.5 | 10.7 | 11.1 | 9.1 | 8.7 |
| 85.5° | 8.7 | 7.6 | 8.7 | 9.5 | 7.2 | 6.8 |
| 86° | 6.8 | 6.4 | 7.2 | 7.6 | 6.0 | 5.2 |
| 86.5° | 5.2 | 4.8 | 5.6 | 6.0 | 4.8 | 4.4 |
| 87° | 3.6 | 3.6 | 4.0 | 4.4 | 3.6 | 3.2 |
| 87.5° | 2.4 | 2.0 | 2.4 | 2.8 | 2.4 | 2.4 |
| 88° | 1.6 | 0.8 | 1.2 | 1.6 | 1.6 | 1.6 |
| 88.5° | 0.4 | 0.4 | 0.4 | 0.4 | 0.8 | 0.8 |



TEST NUMBER: P776347

CATALOG NUMBER: HCDJBL3040CSD-HCD61TRH-HCD61TRLWW-4000lm-3500K

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 |



Report Generated By 670245859 / DESKTOP-T8S5UU9

Signify Classified - Internal
Cooper Lighting Solutions Photometric Lab
1121 Highway 74 South
Peachtree City, GA 30269

Scaled Data Report





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

Signify Classified - Internal
Cooper Lighting Solutions Photometric Lab
1121 Highway 74 South
Peachtree City, GA 30269

Scaled Data Report



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

Scaled Data Report





| | | | | | | | | | | | |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 21.5° | 1810.9 | 1838.3 | 1887.2 | 1957.1 | 2050.5 | 2125.6 | 2172.9 | 2189.6 | 2179.6 | 2147.8 | 2093.0 |
| 22° | 1795.8 | 1823.6 | 1872.8 | 1943.6 | 2039.3 | 2115.6 | 2164.5 | 2180.8 | 2170.5 | 2137.9 | 2082.7 |



| | | | | | | | | | | | |
|-------|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 44° | 992.7 | 1027.6 | 1084.8 | 1170.7 | 1304.6 | 1429.8 | 1522.0 | 1558.1 | 1547.4 | 1498.5 | 1407.5 |
| 44.5° | 972.8 | 1007.8 | 1065.4 | 1151.6 | 1285.1 | 1410.7 | 1503.3 | 1539.8 | 1529.5 | 1480.6 | 1389.2 |



| | | | | | | | | | | | |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 66.5° | 161.7 | 203.1 | 246.4 | 291.7 | 348.1 | 383.9 | 407.3 | 411.3 | 390.6 | 380.7 | 352.1 |
| 67° | 150.2 | 189.2 | 230.9 | 274.6 | 329.8 | 364.4 | 386.6 | 389.8 | 369.2 | 362.4 | 335.0 |



| | | | | | | | | | | | |
|-------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 89° | 0.4 | 0.4 | 0.8 | 0.8 | 1.6 | 1.2 | 0.8 | 0.4 | 0.0 | 0.0 | 0.0 |
| 89.5° | 0.0 | 0.4 | 0.4 | 0.4 | 0.4 | 0.4 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

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1121 Highway 74 South
Peachtree City, GA 30269

Scaled Data Report





| | | | | | | |
|-------|--------|--------|--------|--------|--------|--------|
| 21.5° | 2019.5 | 1933.6 | 1866.9 | 1823.2 | 1804.9 | 1810.9 |
| 22° | 2007.2 | 1920.1 | 1851.8 | 1808.5 | 1789.8 | 1795.8 |



| | | | | | | |
|-------|--------|--------|--------|--------|-------|-------|
| 44° | 1284.3 | 1154.0 | 1064.2 | 1011.3 | 988.7 | 992.7 |
| 44.5° | 1265.3 | 1135.3 | 1045.5 | 991.9 | 969.2 | 972.8 |



| | | | | | | |
|-------|-------|-------|-------|-------|-------|-------|
| 66.5° | 313.9 | 269.0 | 235.2 | 203.9 | 179.6 | 161.7 |
| 67° | 296.4 | 253.1 | 220.5 | 190.7 | 166.9 | 150.2 |

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

Scaled Data Report



| | | | | | | |
|-------|-----|-----|-----|-----|-----|-----|
| 89° | 0.0 | 0.0 | 0.0 | 0.0 | 0.4 | 0.4 |
| 89.5° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

Signify Classified - Internal
Cooper Lighting Solutions Photometric Lab
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Peachtree City, GA 30269

Scaled Data Report



(END OF REPORT)