

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: P776248

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

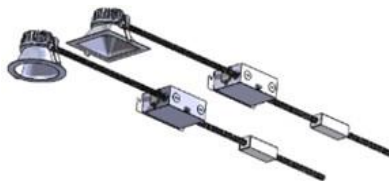
Issue Date: 2/13/2024

**Test Information**

Test Method: LM-79-2019  
Report Number: P776248  
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-4000K  
Description: 4 INCH ROUND SHALLOW-WIDE LENSED WALLWASH KIT  
Light Source: SELECTABLE LUMENS AND CCT ARRAY 90CRI / 4000K CCT  
Ballast/Driver: -

**Summary**

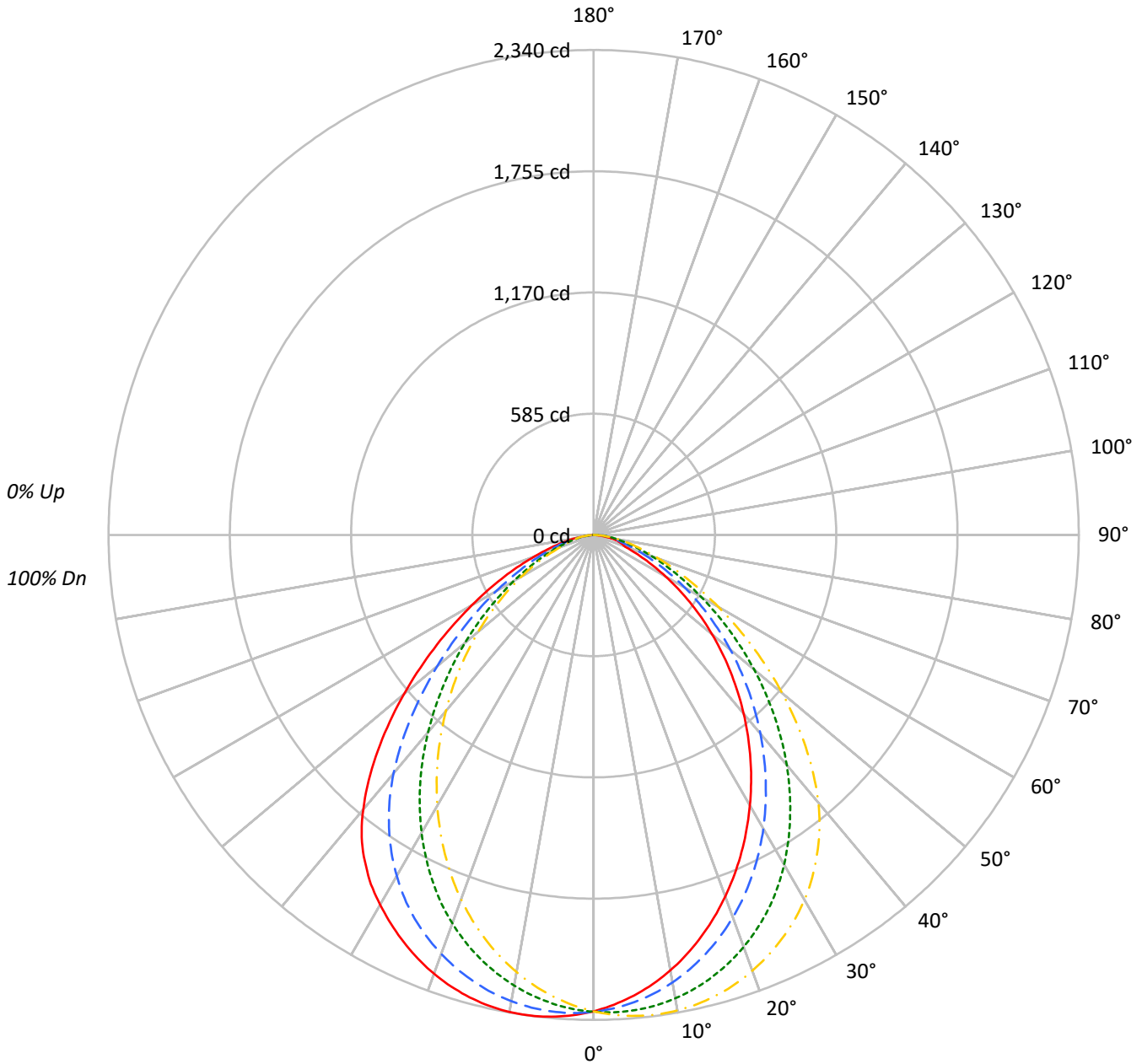
Lumens per Lamp: N/A  
Luminaire Lumens: 4824.4 lumens  
Efficiency: N/A  
Efficacy: 125.3 lumens/watt  
Spacing Criteria (0/90/45): 1.16 / 1.14 / 1.22  
Luminous Opening: Circular (Dia: 0.33' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 38.5  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage 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: P776248

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

### Luminous Intensity Polar Plot





TEST NUMBER: P776248

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

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

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

|     | 0°     | 90°    | 180°   | 270°   |
|-----|--------|--------|--------|--------|
| 0°  | 289404 | 289404 | 289404 | 289404 |
| 5°  | 281856 | 290762 | 294792 | 286745 |
| 10° | 272591 | 290163 | 298661 | 282125 |
| 15° | 261425 | 287692 | 300981 | 275666 |
| 20° | 248635 | 283308 | 301710 | 267050 |
| 25° | 234395 | 276720 | 301020 | 255502 |
| 30° | 219054 | 266922 | 299371 | 241142 |
| 35° | 202475 | 253881 | 295577 | 223968 |
| 40° | 184788 | 237967 | 284066 | 203993 |
| 45° | 165965 | 219127 | 262038 | 181894 |
| 50° | 145940 | 197726 | 233633 | 158745 |
| 55° | 124275 | 174608 | 202386 | 134631 |
| 60° | 100755 | 150995 | 170778 | 111830 |
| 65° | 76829  | 128822 | 141538 | 91361  |
| 70° | 58138  | 109027 | 111418 | 73003  |
| 75° | 60975  | 91171  | 87427  | 58204  |
| 80° | 55805  | 79794  | 62255  | 44716  |
| 85° | 28013  | 80862  | 17472  | 23825  |

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 67.5°  
 Vertical Angle: 89.5°  
 Luminance: 297083 cd/sqm



TEST NUMBER: P776248

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

**ZONAL LUMENS:**

| Zone      | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10°    | 216.5  | 4.5       |
| 10°-20°   | 608.2  | 12.6      |
| 20°-30°   | 884.4  | 18.3      |
| 30°-40°   | 990.6  | 20.5      |
| 40°-50°   | 896.2  | 18.6      |
| 50°-60°   | 650.9  | 13.5      |
| 60°-70°   | 372.4  | 7.7       |
| 70°-80°   | 165.3  | 3.4       |
| 80°-90°   | 40.0   | 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°    | 1709.1 | 35.4      |
| 0°-40°    | 2699.7 | 56.0      |
| 0°-60°    | 4246.8 | 88.0      |
| 0°-90°    | 4824.4 | 100.0     |
| 90°-120°  | 0.0    | 0.0       |
| 90°-150°  | 0.0    | 0.0       |
| 90°-180°  | 0.0    | 0.0       |
| 0°-180°   | 4824.4 | 100.0     |

**CANDELA DISTRIBUTION:**

|     | 0°   | 90°  | 180° | 270° | 360° | Flux |
|-----|------|------|------|------|------|------|
| 0°  | 2300 | 2300 | 2300 | 2300 | 2300 |      |
| 5°  | 2231 | 2302 | 2334 | 2270 | 2231 | 210  |
| 15° | 2006 | 2208 | 2310 | 2116 | 2006 | 563  |
| 25° | 1688 | 1993 | 2168 | 1840 | 1688 | 775  |
| 35° | 1318 | 1652 | 1924 | 1458 | 1318 | 823  |
| 45° | 932  | 1231 | 1472 | 1022 | 932  | 719  |
| 55° | 566  | 796  | 922  | 614  | 566  | 507  |
| 65° | 258  | 433  | 475  | 307  | 258  | 260  |
| 75° | 125  | 188  | 180  | 120  | 125  | 129  |
| 85° | 19   | 56   | 12   | 16   | 19   | 30   |
| 90° | 0    | 12   | 0    | 0    | 0    |      |



TEST NUMBER: P776248

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

**CANDELA DISTRIBUTION (FULL):**

|       | 0°     | 22.5°  | 45°    | 67.5°  | 90°    | 112.5° | 135°   | 157.5° | 180°   | 202.5° | 225°   |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0°    | 2299.6 | 2299.6 | 2299.6 | 2299.6 | 2299.6 | 2299.6 | 2299.6 | 2299.6 | 2299.6 | 2299.6 | 2299.6 |
| 0.5°  | 2293.2 | 2298.8 | 2298.8 | 2298.4 | 2302.8 | 2302.8 | 2303.2 | 2303.2 | 2303.2 | 2306.5 | 2303.2 |
| 1°    | 2287.1 | 2294.4 | 2296.0 | 2297.6 | 2304.0 | 2305.7 | 2307.3 | 2307.3 | 2307.7 | 2309.7 | 2305.3 |
| 1.5°  | 2281.5 | 2289.9 | 2292.8 | 2296.4 | 2304.5 | 2308.5 | 2311.3 | 2311.3 | 2312.1 | 2312.9 | 2306.9 |
| 2°    | 2275.0 | 2284.7 | 2289.5 | 2294.8 | 2305.3 | 2310.5 | 2314.9 | 2314.9 | 2316.1 | 2315.7 | 2308.1 |
| 2.5°  | 2268.6 | 2279.5 | 2285.9 | 2293.2 | 2305.3 | 2312.5 | 2318.2 | 2318.2 | 2319.8 | 2318.2 | 2308.9 |
| 3°    | 2261.3 | 2273.8 | 2281.9 | 2291.1 | 2305.3 | 2314.1 | 2321.0 | 2321.0 | 2323.4 | 2320.2 | 2309.3 |
| 3.5°  | 2254.5 | 2267.8 | 2277.4 | 2288.7 | 2304.9 | 2315.7 | 2323.8 | 2323.8 | 2326.2 | 2322.2 | 2309.7 |
| 4°    | 2246.8 | 2261.7 | 2273.0 | 2285.9 | 2304.0 | 2316.9 | 2326.2 | 2326.2 | 2329.0 | 2323.4 | 2309.3 |
| 4.5°  | 2239.1 | 2255.3 | 2267.8 | 2283.1 | 2302.8 | 2317.8 | 2328.2 | 2328.2 | 2331.5 | 2324.6 | 2308.9 |
| 5°    | 2231.1 | 2248.0 | 2262.5 | 2279.9 | 2301.6 | 2318.2 | 2329.8 | 2329.8 | 2333.5 | 2325.4 | 2308.5 |
| 5.5°  | 2222.6 | 2241.2 | 2256.9 | 2276.2 | 2300.0 | 2318.2 | 2331.1 | 2331.1 | 2335.1 | 2326.2 | 2307.3 |
| 6°    | 2213.7 | 2233.5 | 2250.8 | 2272.2 | 2298.0 | 2317.8 | 2332.3 | 2332.3 | 2336.7 | 2326.2 | 2306.1 |
| 6.5°  | 2204.9 | 2225.8 | 2244.8 | 2267.8 | 2295.6 | 2317.4 | 2333.1 | 2333.1 | 2337.9 | 2326.2 | 2304.5 |
| 7°    | 2195.6 | 2217.8 | 2238.3 | 2263.3 | 2292.8 | 2316.5 | 2333.5 | 2333.5 | 2338.7 | 2325.8 | 2302.4 |
| 7.5°  | 2185.9 | 2209.3 | 2231.5 | 2258.5 | 2289.9 | 2315.7 | 2333.5 | 2333.5 | 2339.1 | 2325.0 | 2300.4 |
| 8°    | 2175.8 | 2200.4 | 2224.2 | 2253.2 | 2286.7 | 2314.1 | 2333.5 | 2333.5 | 2342.3 | 2339.5 | 2324.2 |
| 8.5°  | 2165.8 | 2191.2 | 2216.6 | 2247.6 | 2283.1 | 2312.1 | 2333.1 | 2333.1 | 2342.3 | 2339.1 | 2323.0 |
| 9°    | 2155.3 | 2181.9 | 2208.9 | 2242.0 | 2279.5 | 2310.1 | 2331.9 | 2331.9 | 2342.3 | 2338.7 | 2321.0 |
| 9.5°  | 2144.0 | 2172.2 | 2200.8 | 2235.5 | 2275.0 | 2307.7 | 2331.1 | 2331.1 | 2341.5 | 2338.3 | 2319.4 |
| 10°   | 2133.1 | 2162.1 | 2192.4 | 2229.1 | 2270.6 | 2305.3 | 2329.4 | 2329.4 | 2340.7 | 2337.1 | 2316.9 |
| 10.5° | 2121.4 | 2151.7 | 2183.5 | 2222.2 | 2265.3 | 2302.0 | 2327.8 | 2327.8 | 2339.5 | 2335.9 | 2314.5 |
| 11°   | 2110.1 | 2141.6 | 2174.6 | 2215.4 | 2260.1 | 2298.8 | 2325.8 | 2325.8 | 2337.9 | 2333.9 | 2311.7 |
| 11.5° | 2097.6 | 2130.3 | 2165.4 | 2208.1 | 2254.9 | 2295.2 | 2323.4 | 2323.4 | 2336.3 | 2332.3 | 2308.5 |
| 12°   | 2085.5 | 2119.8 | 2155.7 | 2200.0 | 2249.2 | 2291.1 | 2321.0 | 2321.0 | 2334.3 | 2329.8 | 2305.3 |
| 12.5° | 2073.0 | 2108.1 | 2145.6 | 2192.4 | 2243.2 | 2287.1 | 2317.8 | 2317.8 | 2331.9 | 2327.4 | 2301.6 |
| 13°   | 2060.1 | 2096.4 | 2135.5 | 2183.9 | 2236.7 | 2282.7 | 2314.5 | 2314.5 | 2329.0 | 2324.6 | 2297.6 |
| 13.5° | 2047.2 | 2084.3 | 2125.0 | 2175.0 | 2230.3 | 2277.8 | 2311.3 | 2311.3 | 2325.8 | 2321.4 | 2293.2 |
| 14°   | 2033.9 | 2072.2 | 2114.2 | 2166.2 | 2223.0 | 2272.6 | 2307.3 | 2307.3 | 2322.6 | 2317.8 | 2288.7 |
| 14.5° | 2020.2 | 2059.7 | 2102.9 | 2156.9 | 2215.8 | 2267.0 | 2303.2 | 2303.2 | 2319.0 | 2313.7 | 2283.9 |
| 15°   | 2006.5 | 2047.2 | 2092.0 | 2147.6 | 2208.1 | 2261.3 | 2298.8 | 2298.8 | 2315.3 | 2310.1 | 2278.6 |
| 15.5° | 1992.4 | 2033.5 | 2079.9 | 2137.5 | 2200.0 | 2255.3 | 2294.0 | 2294.0 | 2310.9 | 2305.7 | 2273.0 |
| 16°   | 1978.3 | 2020.6 | 2068.2 | 2127.5 | 2191.6 | 2248.8 | 2288.7 | 2288.7 | 2306.5 | 2300.8 | 2267.4 |
| 16.5° | 1963.4 | 2007.3 | 2055.7 | 2117.4 | 2183.5 | 2242.4 | 2283.5 | 2283.5 | 2301.6 | 2295.6 | 2261.3 |
| 17°   | 1948.9 | 1993.6 | 2043.6 | 2106.9 | 2174.6 | 2235.5 | 2277.8 | 2277.8 | 2296.8 | 2290.7 | 2254.9 |
| 17.5° | 1933.9 | 1979.5 | 2030.7 | 2095.6 | 2165.4 | 2228.3 | 2271.8 | 2271.8 | 2291.1 | 2285.1 | 2248.0 |
| 18°   | 1919.0 | 1965.4 | 2017.8 | 2084.3 | 2156.1 | 2220.6 | 2265.7 | 2265.7 | 2285.5 | 2279.1 | 2241.6 |
| 18.5° | 1903.3 | 1950.9 | 2004.5 | 2072.6 | 2146.4 | 2212.9 | 2259.3 | 2259.3 | 2279.5 | 2273.0 | 2234.3 |
| 19°   | 1887.6 | 1936.0 | 1991.2 | 2060.5 | 2136.3 | 2204.9 | 2252.4 | 2252.4 | 2273.4 | 2266.6 | 2226.6 |
| 19.5° | 1872.3 | 1921.0 | 1977.1 | 2048.4 | 2126.3 | 2196.4 | 2245.2 | 2245.2 | 2266.6 | 2259.7 | 2219.0 |
| 20°   | 1856.5 | 1906.1 | 1963.4 | 2036.4 | 2115.4 | 2187.9 | 2237.9 | 2237.9 | 2259.7 | 2252.8 | 2211.3 |
| 20.5° | 1840.0 | 1890.8 | 1949.3 | 2023.4 | 2104.5 | 2179.1 | 2230.3 | 2230.3 | 2252.8 | 2245.6 | 2202.9 |
| 21°   | 1823.9 | 1875.1 | 1934.8 | 2010.5 | 2093.2 | 2169.8 | 2222.2 | 2222.2 | 2245.2 | 2237.9 | 2194.4 |



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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° | 1773.9 | 1827.5 | 1890.0 | 1969.8 | 2057.7 | 2140.4 | 2196.8 | 2221.4 | 2213.7 | 2167.4 | 2100.5 |
| 23°   | 1757.4 | 1811.4 | 1874.7 | 1956.1 | 2045.6 | 2129.9 | 2187.9 | 2212.9 | 2204.9 | 2158.1 | 2089.6 |
| 23.5° | 1740.0 | 1794.5 | 1859.0 | 1941.6 | 2032.7 | 2119.0 | 2178.7 | 2204.5 | 2196.4 | 2148.4 | 2078.7 |
| 24°   | 1722.7 | 1778.7 | 1843.2 | 1926.7 | 2019.8 | 2108.5 | 2169.0 | 2195.2 | 2187.1 | 2138.3 | 2067.0 |
| 24.5° | 1705.4 | 1761.8 | 1827.1 | 1911.8 | 2006.5 | 2096.8 | 2159.3 | 2185.9 | 2177.9 | 2128.3 | 2054.9 |
| 25°   | 1688.0 | 1744.5 | 1810.6 | 1896.9 | 1992.8 | 2085.5 | 2149.2 | 2176.6 | 2167.8 | 2118.2 | 2042.8 |
| 25.5° | 1670.3 | 1727.5 | 1794.1 | 1881.1 | 1978.7 | 2073.4 | 2139.2 | 2166.6 | 2158.1 | 2107.7 | 2030.3 |
| 26°   | 1652.9 | 1710.6 | 1776.7 | 1865.4 | 1964.6 | 2060.9 | 2128.7 | 2156.9 | 2148.4 | 2096.8 | 2017.4 |
| 26.5° | 1634.8 | 1693.3 | 1760.2 | 1848.9 | 1949.7 | 2048.4 | 2117.8 | 2146.8 | 2137.9 | 2085.5 | 2004.1 |
| 27°   | 1617.1 | 1675.5 | 1743.3 | 1833.2 | 1934.4 | 2035.9 | 2106.9 | 2136.7 | 2127.5 | 2074.2 | 1990.0 |
| 27.5° | 1598.9 | 1657.8 | 1725.9 | 1816.6 | 1919.0 | 2022.2 | 2095.6 | 2126.3 | 2117.0 | 2063.0 | 1975.9 |
| 28°   | 1580.8 | 1640.0 | 1707.8 | 1799.3 | 1903.3 | 2008.5 | 2083.9 | 2115.0 | 2105.7 | 2051.3 | 1961.4 |
| 28.5° | 1562.6 | 1622.3 | 1690.8 | 1782.0 | 1887.2 | 1994.4 | 2071.4 | 2104.5 | 2094.8 | 2038.4 | 1946.0 |
| 29°   | 1544.1 | 1604.2 | 1673.1 | 1764.2 | 1870.7 | 1980.3 | 2059.3 | 2093.2 | 2083.5 | 2025.9 | 1930.7 |
| 29.5° | 1525.5 | 1586.0 | 1655.4 | 1746.9 | 1853.7 | 1965.0 | 2046.4 | 2081.9 | 2072.2 | 2012.6 | 1915.4 |
| 30°   | 1507.4 | 1567.9 | 1636.0 | 1729.1 | 1836.8 | 1949.7 | 2033.5 | 2070.2 | 2060.1 | 1999.3 | 1899.7 |
| 30.5° | 1488.5 | 1549.7 | 1618.3 | 1710.6 | 1819.9 | 1933.5 | 2019.8 | 2058.1 | 2048.4 | 1985.1 | 1883.2 |
| 31°   | 1469.5 | 1530.8 | 1599.7 | 1692.5 | 1802.1 | 1917.4 | 2005.7 | 2045.6 | 2036.4 | 1970.6 | 1866.6 |
| 31.5° | 1451.0 | 1512.6 | 1581.2 | 1673.9 | 1784.0 | 1900.9 | 1991.6 | 2033.1 | 2024.3 | 1956.1 | 1850.1 |
| 32°   | 1432.4 | 1493.7 | 1561.8 | 1655.0 | 1765.8 | 1884.8 | 1976.7 | 2020.2 | 2011.4 | 1941.2 | 1832.8 |
| 32.5° | 1413.5 | 1474.8 | 1543.3 | 1636.8 | 1747.7 | 1867.4 | 1961.0 | 2006.5 | 1998.9 | 1925.5 | 1815.4 |
| 33°   | 1394.5 | 1456.2 | 1523.9 | 1617.1 | 1729.1 | 1850.5 | 1945.2 | 1992.4 | 1985.1 | 1909.4 | 1797.3 |
| 33.5° | 1375.6 | 1437.3 | 1505.4 | 1598.1 | 1710.2 | 1832.8 | 1929.1 | 1978.3 | 1970.2 | 1892.8 | 1779.1 |
| 34°   | 1356.6 | 1418.3 | 1485.6 | 1579.2 | 1691.2 | 1815.0 | 1913.0 | 1963.4 | 1954.5 | 1877.1 | 1760.2 |
| 34.5° | 1337.3 | 1399.4 | 1466.7 | 1559.8 | 1671.5 | 1796.9 | 1896.5 | 1948.1 | 1939.2 | 1859.4 | 1741.2 |
| 35°   | 1317.9 | 1380.0 | 1446.9 | 1540.1 | 1652.5 | 1778.3 | 1879.5 | 1931.9 | 1923.9 | 1842.0 | 1721.9 |
| 35.5° | 1299.0 | 1361.1 | 1427.6 | 1519.9 | 1632.8 | 1759.8 | 1862.2 | 1916.2 | 1908.5 | 1823.9 | 1701.3 |
| 36°   | 1279.6 | 1341.7 | 1407.8 | 1500.2 | 1613.0 | 1740.8 | 1844.4 | 1899.3 | 1892.0 | 1805.3 | 1681.2 |
| 36.5° | 1260.7 | 1322.8 | 1388.9 | 1480.4 | 1593.3 | 1721.1 | 1826.3 | 1882.7 | 1874.7 | 1784.8 | 1659.8 |
| 37°   | 1240.9 | 1303.4 | 1369.5 | 1460.6 | 1573.1 | 1701.3 | 1807.8 | 1865.0 | 1856.5 | 1764.6 | 1638.4 |
| 37.5° | 1222.0 | 1283.7 | 1349.0 | 1440.5 | 1552.2 | 1681.6 | 1788.4 | 1847.3 | 1838.0 | 1743.7 | 1616.7 |
| 38°   | 1202.2 | 1264.3 | 1329.6 | 1419.9 | 1531.6 | 1661.0 | 1768.7 | 1828.3 | 1817.4 | 1721.9 | 1594.5 |
| 38.5° | 1183.7 | 1245.4 | 1309.5 | 1399.8 | 1511.0 | 1640.0 | 1748.9 | 1808.6 | 1796.9 | 1699.3 | 1571.9 |
| 39°   | 1164.3 | 1225.6 | 1289.7 | 1378.8 | 1490.1 | 1619.9 | 1728.3 | 1787.2 | 1775.5 | 1676.3 | 1548.1 |
| 39.5° | 1144.6 | 1206.7 | 1269.9 | 1359.4 | 1469.1 | 1598.5 | 1707.8 | 1765.4 | 1752.1 | 1652.5 | 1524.7 |
| 40°   | 1124.8 | 1187.3 | 1250.2 | 1338.9 | 1448.5 | 1577.2 | 1685.6 | 1742.4 | 1729.1 | 1628.4 | 1500.6 |
| 40.5° | 1106.3 | 1167.9 | 1230.4 | 1317.9 | 1426.8 | 1555.0 | 1663.4 | 1719.9 | 1705.4 | 1603.4 | 1476.0 |
| 41°   | 1086.1 | 1148.6 | 1210.3 | 1297.4 | 1405.4 | 1533.2 | 1640.0 | 1695.7 | 1681.2 | 1578.0 | 1451.4 |
| 41.5° | 1067.2 | 1129.2 | 1190.9 | 1277.2 | 1384.0 | 1511.0 | 1617.9 | 1672.3 | 1656.2 | 1552.2 | 1426.8 |
| 42°   | 1047.8 | 1109.5 | 1171.2 | 1256.2 | 1362.3 | 1488.1 | 1593.7 | 1647.3 | 1630.8 | 1526.0 | 1401.4 |
| 42.5° | 1028.9 | 1090.5 | 1151.0 | 1235.7 | 1340.5 | 1465.5 | 1569.9 | 1623.5 | 1605.4 | 1500.2 | 1376.0 |
| 43°   | 1009.5 | 1071.2 | 1131.3 | 1215.5 | 1319.1 | 1442.9 | 1545.3 | 1598.1 | 1579.6 | 1472.3 | 1350.2 |
| 43.5° | 990.6  | 1052.2 | 1111.5 | 1195.0 | 1297.4 | 1419.5 | 1521.1 | 1572.7 | 1553.0 | 1445.3 | 1324.4 |



TEST NUMBER: P776248

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

**CANDELA DISTRIBUTION (continued):**

|       | 0°    | 22.5° | 45°    | 67.5°  | 90°    | 112.5° | 135°   | 157.5° | 180°   | 202.5° | 225°   |
|-------|-------|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 45°   | 932.5 | 994.6 | 1052.6 | 1133.3 | 1231.2 | 1348.2 | 1445.7 | 1494.5 | 1472.3 | 1363.1 | 1245.4 |
| 45.5° | 914.4 | 975.2 | 1032.9 | 1112.3 | 1209.5 | 1324.4 | 1420.7 | 1468.3 | 1444.9 | 1335.7 | 1219.1 |
| 46°   | 895.0 | 956.3 | 1013.5 | 1091.8 | 1187.3 | 1299.8 | 1394.5 | 1441.7 | 1417.5 | 1308.2 | 1192.1 |
| 46.5° | 876.1 | 937.7 | 994.2  | 1071.6 | 1164.7 | 1276.0 | 1369.1 | 1414.7 | 1389.3 | 1280.4 | 1165.9 |
| 47°   | 857.1 | 918.4 | 974.8  | 1051.0 | 1142.5 | 1251.4 | 1343.3 | 1387.3 | 1361.5 | 1252.6 | 1139.3 |
| 47.5° | 838.6 | 899.4 | 955.5  | 1030.9 | 1120.4 | 1227.2 | 1317.1 | 1359.9 | 1333.2 | 1225.2 | 1113.5 |
| 48°   | 819.6 | 880.5 | 936.1  | 1010.3 | 1098.6 | 1203.0 | 1290.9 | 1332.8 | 1305.4 | 1197.8 | 1087.3 |
| 48.5° | 801.1 | 862.0 | 916.8  | 990.2  | 1076.4 | 1178.4 | 1265.1 | 1305.8 | 1277.6 | 1170.8 | 1061.5 |
| 49°   | 782.5 | 843.4 | 897.8  | 970.0  | 1054.3 | 1154.2 | 1238.9 | 1278.0 | 1249.0 | 1143.0 | 1036.1 |
| 49.5° | 764.4 | 824.5 | 879.3  | 950.2  | 1032.1 | 1130.1 | 1212.7 | 1250.6 | 1221.2 | 1116.3 | 1010.7 |
| 50°   | 745.4 | 806.3 | 859.9  | 930.5  | 1009.9 | 1105.9 | 1186.5 | 1222.8 | 1193.3 | 1088.9 | 985.3  |
| 50.5° | 727.3 | 787.8 | 841.0  | 909.9  | 988.1  | 1081.7 | 1160.7 | 1195.0 | 1165.1 | 1062.7 | 959.9  |
| 51°   | 709.2 | 769.2 | 822.4  | 889.8  | 966.0  | 1057.1 | 1134.5 | 1167.9 | 1137.7 | 1036.1 | 935.7  |
| 51.5° | 691.0 | 750.7 | 803.9  | 870.4  | 944.2  | 1033.7 | 1108.7 | 1140.5 | 1109.5 | 1009.5 | 911.1  |
| 52°   | 673.3 | 732.5 | 785.8  | 851.1  | 922.8  | 1009.5 | 1083.3 | 1113.1 | 1082.1 | 983.7  | 886.9  |
| 52.5° | 655.5 | 714.4 | 767.2  | 831.7  | 901.5  | 985.7  | 1057.1 | 1085.3 | 1054.7 | 957.9  | 863.2  |
| 53°   | 637.4 | 696.7 | 748.7  | 811.6  | 880.1  | 961.9  | 1031.3 | 1058.3 | 1028.1 | 932.5  | 839.4  |
| 53.5° | 618.8 | 678.1 | 730.5  | 792.6  | 858.3  | 939.0  | 1005.9 | 1031.3 | 1001.0 | 906.7  | 816.0  |
| 54°   | 601.5 | 660.8 | 712.8  | 773.3  | 837.4  | 915.2  | 980.5  | 1004.7 | 973.6  | 882.1  | 793.0  |
| 54.5° | 583.8 | 642.6 | 694.6  | 753.9  | 816.8  | 892.6  | 955.9  | 977.3  | 947.8  | 857.5  | 770.4  |
| 55°   | 566.4 | 625.7 | 676.9  | 735.4  | 795.8  | 870.0  | 931.3  | 952.3  | 922.4  | 833.3  | 748.3  |
| 55.5° | 549.1 | 608.0 | 659.2  | 716.4  | 775.3  | 847.4  | 906.3  | 925.2  | 895.8  | 809.1  | 725.3  |
| 56°   | 531.8 | 591.0 | 641.8  | 697.5  | 754.3  | 824.5  | 881.3  | 899.4  | 870.4  | 784.9  | 703.9  |
| 56.5° | 514.4 | 573.7 | 624.5  | 678.9  | 734.6  | 802.3  | 857.1  | 873.6  | 845.0  | 761.6  | 682.9  |
| 57°   | 497.5 | 556.8 | 607.2  | 660.8  | 714.8  | 780.5  | 833.3  | 848.2  | 820.0  | 738.6  | 661.6  |
| 57.5° | 481.0 | 539.8 | 589.8  | 642.2  | 695.0  | 759.1  | 809.9  | 823.2  | 795.4  | 716.0  | 641.0  |
| 58°   | 464.0 | 523.3 | 572.9  | 624.1  | 675.3  | 737.4  | 786.2  | 798.7  | 771.6  | 693.8  | 620.9  |
| 58.5° | 447.9 | 506.8 | 556.4  | 606.3  | 656.3  | 716.4  | 763.2  | 774.5  | 747.5  | 671.3  | 600.7  |
| 59°   | 431.8 | 491.0 | 539.8  | 589.0  | 637.0  | 695.4  | 740.2  | 750.7  | 723.7  | 649.9  | 581.4  |
| 59.5° | 415.7 | 474.5 | 522.5  | 571.7  | 618.4  | 674.9  | 717.6  | 727.3  | 700.7  | 628.5  | 562.0  |
| 60°   | 400.3 | 458.8 | 506.4  | 554.7  | 599.9  | 654.3  | 695.4  | 704.3  | 678.5  | 608.0  | 543.1  |
| 60.5° | 384.6 | 442.7 | 489.8  | 537.4  | 581.8  | 634.6  | 673.3  | 681.3  | 655.5  | 587.4  | 524.1  |
| 61°   | 369.3 | 427.3 | 474.1  | 520.9  | 564.0  | 614.8  | 651.9  | 659.2  | 634.2  | 567.2  | 506.4  |
| 61.5° | 354.4 | 412.0 | 458.0  | 504.4  | 547.1  | 595.5  | 630.9  | 637.4  | 612.4  | 547.5  | 488.6  |
| 62°   | 339.9 | 397.1 | 443.1  | 488.6  | 529.3  | 576.5  | 610.0  | 616.0  | 592.2  | 528.9  | 471.3  |
| 62.5° | 324.9 | 382.2 | 427.8  | 472.5  | 512.8  | 557.6  | 589.4  | 594.7  | 571.3  | 509.6  | 454.0  |
| 63°   | 311.2 | 367.7 | 412.8  | 457.2  | 495.9  | 539.0  | 569.3  | 574.1  | 550.7  | 491.0  | 437.4  |
| 63.5° | 297.5 | 353.2 | 397.9  | 442.3  | 479.8  | 520.9  | 549.5  | 553.9  | 531.4  | 472.9  | 420.9  |
| 64°   | 284.2 | 338.7 | 384.2  | 427.3  | 463.6  | 503.1  | 530.2  | 534.6  | 512.0  | 456.4  | 405.2  |
| 64.5° | 270.5 | 324.5 | 369.7  | 412.4  | 448.3  | 485.8  | 511.2  | 515.2  | 493.1  | 438.6  | 389.9  |
| 65°   | 258.0 | 311.2 | 356.0  | 398.3  | 432.6  | 468.9  | 493.1  | 496.3  | 475.3  | 422.1  | 374.9  |
| 65.5° | 245.1 | 297.9 | 342.3  | 384.6  | 417.7  | 451.9  | 474.9  | 478.1  | 456.8  | 405.2  | 360.0  |
| 66°   | 232.6 | 284.6 | 329.4  | 370.9  | 403.2  | 435.4  | 457.2  | 460.0  | 437.8  | 389.5  | 345.9  |





TEST NUMBER: P776248

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

**CANDELA DISTRIBUTION (continued):**

|       | 0°    | 22.5° | 45°   | 67.5° | 90°   | 112.5° | 135°  | 157.5° | 180°  | 202.5° | 225°  |
|-------|-------|-------|-------|-------|-------|--------|-------|--------|-------|--------|-------|
| 67.5° | 198.8 | 246.7 | 290.7 | 330.6 | 361.2 | 388.6  | 407.2 | 408.8  | 384.2 | 344.3  | 304.4 |
| 68°   | 188.7 | 235.0 | 279.0 | 318.1 | 348.3 | 373.3  | 390.7 | 391.9  | 367.3 | 329.4  | 291.9 |
| 68.5° | 179.4 | 223.3 | 266.9 | 305.6 | 335.4 | 358.8  | 375.3 | 375.7  | 351.2 | 314.5  | 279.4 |
| 69°   | 170.5 | 212.1 | 255.2 | 293.5 | 322.1 | 345.1  | 360.4 | 360.4  | 335.0 | 299.5  | 267.3 |
| 69.5° | 162.9 | 201.2 | 243.9 | 281.4 | 309.2 | 331.4  | 346.3 | 345.5  | 318.9 | 285.4  | 255.6 |
| 70°   | 158.0 | 190.7 | 232.6 | 269.7 | 296.3 | 318.1  | 332.2 | 330.6  | 302.8 | 272.1  | 243.9 |
| 70.5° | 155.2 | 180.6 | 222.1 | 258.0 | 283.8 | 304.4  | 318.1 | 316.1  | 289.1 | 258.8  | 233.0 |
| 71°   | 152.4 | 171.7 | 211.7 | 247.1 | 272.1 | 291.5  | 304.0 | 301.2  | 275.4 | 246.3  | 222.1 |
| 71.5° | 149.6 | 163.3 | 202.0 | 235.8 | 260.4 | 279.0  | 291.1 | 287.0  | 261.2 | 234.2  | 211.7 |
| 72°   | 146.7 | 156.4 | 192.3 | 225.4 | 249.2 | 267.3  | 278.2 | 273.7  | 248.3 | 222.5  | 201.6 |
| 72.5° | 143.1 | 151.6 | 183.0 | 215.3 | 238.3 | 255.2  | 265.7 | 260.8  | 235.8 | 211.3  | 191.5 |
| 73°   | 139.5 | 148.0 | 174.6 | 205.2 | 227.4 | 243.9  | 254.4 | 248.3  | 223.8 | 200.0  | 181.8 |
| 73.5° | 136.3 | 144.7 | 166.1 | 195.5 | 216.9 | 232.6  | 242.3 | 236.3  | 212.1 | 189.1  | 172.6 |
| 74°   | 132.6 | 141.5 | 158.4 | 186.3 | 206.8 | 222.5  | 231.0 | 224.6  | 201.2 | 178.6  | 163.3 |
| 74.5° | 129.4 | 138.7 | 150.8 | 177.4 | 197.1 | 212.1  | 220.1 | 213.3  | 190.3 | 168.5  | 154.4 |
| 75°   | 125.4 | 135.5 | 143.9 | 168.9 | 187.5 | 202.0  | 210.0 | 202.4  | 179.8 | 158.8  | 145.9 |
| 75.5° | 121.4 | 132.2 | 139.1 | 160.5 | 178.2 | 191.9  | 199.2 | 191.9  | 169.7 | 149.2  | 137.5 |
| 76°   | 116.9 | 128.6 | 134.3 | 152.8 | 169.7 | 182.6  | 189.5 | 181.4  | 159.7 | 139.9  | 129.0 |
| 76.5° | 112.1 | 124.6 | 129.4 | 145.1 | 160.9 | 173.8  | 179.8 | 171.3  | 150.4 | 130.6  | 120.9 |
| 77°   | 107.6 | 120.5 | 124.2 | 138.7 | 152.8 | 164.9  | 170.5 | 161.3  | 140.7 | 121.8  | 113.3 |
| 77.5° | 102.8 | 116.5 | 120.5 | 132.6 | 145.1 | 156.4  | 161.3 | 152.0  | 131.4 | 112.9  | 105.6 |
| 78°   | 98.0  | 112.1 | 117.3 | 126.6 | 137.5 | 148.0  | 152.4 | 142.7  | 122.2 | 104.4  | 97.6  |
| 78.5° | 92.7  | 108.0 | 114.1 | 120.5 | 130.2 | 140.3  | 143.9 | 133.8  | 112.9 | 96.0   | 90.3  |
| 79°   | 87.5  | 103.2 | 110.5 | 114.5 | 123.4 | 132.6  | 135.5 | 125.0  | 103.6 | 87.5   | 83.1  |
| 79.5° | 82.2  | 98.8  | 106.8 | 109.3 | 116.5 | 125.4  | 127.4 | 116.1  | 94.7  | 79.4   | 75.8  |
| 80°   | 77.0  | 93.9  | 102.8 | 104.0 | 110.1 | 118.1  | 119.7 | 107.6  | 85.9  | 71.8   | 68.9  |
| 80.5° | 71.4  | 89.1  | 98.8  | 99.6  | 104.0 | 111.3  | 112.1 | 100.0  | 77.0  | 63.7   | 62.5  |
| 81°   | 65.7  | 83.9  | 94.7  | 95.1  | 98.0  | 104.4  | 104.4 | 91.5   | 68.1  | 56.4   | 56.0  |
| 81.5° | 60.1  | 79.0  | 90.3  | 90.7  | 92.3  | 98.0   | 97.2  | 83.9   | 59.3  | 49.2   | 49.6  |
| 82°   | 54.4  | 73.4  | 85.9  | 86.3  | 86.7  | 91.5   | 89.5  | 76.2   | 50.4  | 43.1   | 43.5  |
| 82.5° | 48.8  | 68.1  | 81.4  | 82.2  | 81.4  | 85.5   | 82.2  | 68.9   | 43.5  | 37.5   | 38.3  |
| 83°   | 42.3  | 62.5  | 77.0  | 77.8  | 76.2  | 79.0   | 75.4  | 61.7   | 36.3  | 31.8   | 33.1  |
| 83.5° | 36.3  | 56.8  | 72.2  | 74.2  | 71.0  | 73.0   | 68.5  | 55.2   | 29.0  | 26.2   | 27.8  |
| 84°   | 30.2  | 51.2  | 67.7  | 70.1  | 65.7  | 66.9   | 62.1  | 48.4   | 22.2  | 20.6   | 22.6  |
| 84.5° | 24.6  | 45.6  | 62.9  | 66.1  | 60.9  | 61.3   | 56.0  | 42.7   | 14.9  | 16.5   | 17.7  |
| 85°   | 19.4  | 39.9  | 58.5  | 62.1  | 56.0  | 55.6   | 50.0  | 37.1   | 12.1  | 12.9   | 12.9  |
| 85.5° | 15.7  | 34.7  | 54.0  | 58.1  | 51.6  | 50.4   | 44.3  | 31.8   | 9.7   | 9.3    | 9.3   |
| 86°   | 13.7  | 30.2  | 49.6  | 53.6  | 47.2  | 45.2   | 39.5  | 26.2   | 8.1   | 6.0    | 5.6   |
| 86.5° | 11.3  | 26.6  | 45.2  | 49.2  | 42.7  | 40.3   | 34.3  | 20.6   | 6.5   | 3.2    | 3.2   |
| 87°   | 9.3   | 23.4  | 40.7  | 44.3  | 38.7  | 35.5   | 29.0  | 16.1   | 4.8   | 1.6    | 1.2   |
| 87.5° | 7.3   | 20.2  | 35.9  | 39.9  | 34.3  | 30.6   | 23.8  | 11.7   | 4.0   | 0.8    | 0.0   |
| 88°   | 5.2   | 16.9  | 31.4  | 35.1  | 29.8  | 25.8   | 18.5  | 8.1    | 2.4   | 0.4    | 0.0   |
| 88.5° | 3.2   | 13.7  | 26.6  | 30.6  | 25.8  | 21.0   | 14.1  | 4.8    | 1.2   | 0.0    | 0.0   |



TEST NUMBER: P776248

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

**CANDELA DISTRIBUTION (continued):**

|     | 0°  | 22.5° | 45°  | 67.5° | 90°  | 112.5° | 135° | 157.5° | 180° | 202.5° | 225° |
|-----|-----|-------|------|-------|------|--------|------|--------|------|--------|------|
| 90° | 0.0 | 4.4   | 13.3 | 15.3  | 12.1 | 8.9    | 3.2  | 0.4    | 0.0  | 0.0    | 0.0  |



TEST NUMBER: P776248

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

**CANDELA DISTRIBUTION (continued):**

|       | 247.5° | 270°   | 292.5° | 315°   | 337.5° | 360°   |
|-------|--------|--------|--------|--------|--------|--------|
| 0°    | 2299.6 | 2299.6 | 2299.6 | 2299.6 | 2299.6 | 2299.6 |
| 0.5°  | 2298.8 | 2299.6 | 2296.0 | 2293.6 | 2292.8 | 2293.2 |
| 1°    | 2298.8 | 2297.6 | 2292.4 | 2288.3 | 2286.7 | 2287.1 |
| 1.5°  | 2298.4 | 2295.2 | 2287.9 | 2282.7 | 2280.7 | 2281.5 |
| 2°    | 2297.6 | 2292.4 | 2283.5 | 2277.0 | 2274.2 | 2275.0 |
| 2.5°  | 2296.4 | 2289.5 | 2278.6 | 2271.4 | 2267.8 | 2268.6 |
| 3°    | 2295.2 | 2286.3 | 2273.4 | 2264.5 | 2260.9 | 2261.3 |
| 3.5°  | 2293.2 | 2282.7 | 2268.2 | 2258.1 | 2253.7 | 2254.5 |
| 4°    | 2291.5 | 2278.6 | 2262.5 | 2250.8 | 2245.6 | 2246.8 |
| 4.5°  | 2289.1 | 2274.6 | 2256.1 | 2243.6 | 2237.5 | 2239.1 |
| 5°    | 2286.3 | 2269.8 | 2250.0 | 2235.9 | 2229.5 | 2231.1 |
| 5.5°  | 2283.5 | 2264.9 | 2243.2 | 2227.9 | 2221.0 | 2222.6 |
| 6°    | 2280.3 | 2260.1 | 2235.9 | 2219.4 | 2212.1 | 2213.7 |
| 6.5°  | 2276.6 | 2254.5 | 2229.1 | 2210.9 | 2202.9 | 2204.9 |
| 7°    | 2272.6 | 2248.8 | 2221.4 | 2202.0 | 2193.2 | 2195.6 |
| 7.5°  | 2268.6 | 2242.8 | 2213.3 | 2192.8 | 2183.5 | 2185.9 |
| 8°    | 2264.1 | 2236.3 | 2205.3 | 2183.1 | 2173.0 | 2175.8 |
| 8.5°  | 2259.3 | 2229.9 | 2196.4 | 2173.4 | 2162.5 | 2165.8 |
| 9°    | 2254.5 | 2222.6 | 2187.9 | 2163.3 | 2152.1 | 2155.3 |
| 9.5°  | 2248.8 | 2215.4 | 2178.3 | 2152.9 | 2140.8 | 2144.0 |
| 10°   | 2243.2 | 2207.7 | 2169.0 | 2142.0 | 2129.5 | 2133.1 |
| 10.5° | 2237.5 | 2200.0 | 2159.3 | 2131.1 | 2118.2 | 2121.4 |
| 11°   | 2231.1 | 2191.6 | 2149.2 | 2119.8 | 2106.1 | 2110.1 |
| 11.5° | 2224.6 | 2183.5 | 2139.2 | 2108.5 | 2094.0 | 2097.6 |
| 12°   | 2217.8 | 2174.2 | 2128.3 | 2096.4 | 2081.5 | 2085.5 |
| 12.5° | 2210.9 | 2165.4 | 2117.4 | 2083.9 | 2069.0 | 2073.0 |
| 13°   | 2203.3 | 2156.1 | 2106.1 | 2071.8 | 2056.1 | 2060.1 |
| 13.5° | 2195.6 | 2146.4 | 2094.8 | 2058.9 | 2042.4 | 2047.2 |
| 14°   | 2187.5 | 2136.3 | 2082.7 | 2046.0 | 2029.5 | 2033.9 |
| 14.5° | 2179.5 | 2126.3 | 2071.0 | 2032.7 | 2015.8 | 2020.2 |
| 15°   | 2171.0 | 2115.8 | 2058.5 | 2019.4 | 2001.7 | 2006.5 |
| 15.5° | 2162.1 | 2104.5 | 2045.6 | 2005.3 | 1987.6 | 1992.4 |
| 16°   | 2152.9 | 2093.6 | 2032.7 | 1991.6 | 1973.1 | 1978.3 |
| 16.5° | 2143.6 | 2082.7 | 2019.8 | 1977.5 | 1958.5 | 1963.4 |
| 17°   | 2133.9 | 2070.6 | 2006.5 | 1963.0 | 1943.2 | 1948.9 |
| 17.5° | 2124.2 | 2058.5 | 1992.4 | 1948.1 | 1927.9 | 1933.9 |
| 18°   | 2113.8 | 2046.4 | 1978.7 | 1933.1 | 1913.0 | 1919.0 |
| 18.5° | 2103.7 | 2033.9 | 1964.2 | 1917.8 | 1897.3 | 1903.3 |
| 19°   | 2092.8 | 2021.0 | 1949.7 | 1902.5 | 1881.5 | 1887.6 |
| 19.5° | 2081.9 | 2008.1 | 1934.8 | 1886.4 | 1865.4 | 1872.3 |
| 20°   | 2070.6 | 1994.0 | 1919.4 | 1870.7 | 1849.7 | 1856.5 |
| 20.5° | 2058.9 | 1980.3 | 1904.1 | 1854.5 | 1833.6 | 1840.0 |
| 21°   | 2046.4 | 1965.8 | 1888.4 | 1838.0 | 1817.0 | 1823.9 |

TEST NUMBER: P776248

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

**CANDELA DISTRIBUTION (continued):**

|       | 247.5° | 270°   | 292.5° | 315°   | 337.5° | 360°   |
|-------|--------|--------|--------|--------|--------|--------|
| 22.5° | 2008.9 | 1921.9 | 1839.2 | 1787.2 | 1766.2 | 1773.9 |
| 23°   | 1995.2 | 1905.7 | 1822.3 | 1769.9 | 1749.3 | 1757.4 |
| 23.5° | 1981.5 | 1890.4 | 1804.9 | 1752.1 | 1732.0 | 1740.0 |
| 24°   | 1967.0 | 1873.9 | 1787.6 | 1734.4 | 1714.2 | 1722.7 |
| 24.5° | 1952.9 | 1857.3 | 1769.9 | 1716.2 | 1696.5 | 1705.4 |
| 25°   | 1937.6 | 1840.0 | 1751.7 | 1698.1 | 1678.3 | 1688.0 |
| 25.5° | 1922.7 | 1823.5 | 1734.0 | 1680.0 | 1660.6 | 1670.3 |
| 26°   | 1906.5 | 1806.6 | 1715.0 | 1661.4 | 1642.5 | 1652.9 |
| 26.5° | 1890.8 | 1789.2 | 1697.3 | 1642.5 | 1623.9 | 1634.8 |
| 27°   | 1874.7 | 1770.7 | 1677.9 | 1623.9 | 1605.8 | 1617.1 |
| 27.5° | 1858.2 | 1752.9 | 1659.4 | 1605.0 | 1587.2 | 1598.9 |
| 28°   | 1841.2 | 1734.4 | 1639.6 | 1585.6 | 1568.3 | 1580.8 |
| 28.5° | 1824.7 | 1716.2 | 1621.1 | 1566.7 | 1549.3 | 1562.6 |
| 29°   | 1807.0 | 1697.7 | 1601.3 | 1547.3 | 1530.8 | 1544.1 |
| 29.5° | 1789.2 | 1678.7 | 1582.4 | 1528.0 | 1511.8 | 1525.5 |
| 30°   | 1771.9 | 1659.4 | 1562.2 | 1508.6 | 1492.9 | 1507.4 |
| 30.5° | 1754.1 | 1640.0 | 1542.5 | 1488.9 | 1473.5 | 1488.5 |
| 31°   | 1735.6 | 1620.7 | 1522.3 | 1469.1 | 1454.6 | 1469.5 |
| 31.5° | 1716.6 | 1600.9 | 1502.6 | 1449.4 | 1435.2 | 1451.0 |
| 32°   | 1697.7 | 1580.8 | 1482.4 | 1429.2 | 1415.9 | 1432.4 |
| 32.5° | 1678.3 | 1561.0 | 1461.9 | 1410.2 | 1396.1 | 1413.5 |
| 33°   | 1659.0 | 1540.9 | 1441.7 | 1389.7 | 1377.2 | 1394.5 |
| 33.5° | 1638.8 | 1520.7 | 1421.5 | 1369.9 | 1357.4 | 1375.6 |
| 34°   | 1618.7 | 1499.7 | 1401.4 | 1349.4 | 1338.1 | 1356.6 |
| 34.5° | 1598.5 | 1478.8 | 1380.8 | 1329.2 | 1318.7 | 1337.3 |
| 35°   | 1578.0 | 1457.8 | 1359.4 | 1309.5 | 1299.0 | 1317.9 |
| 35.5° | 1556.6 | 1437.3 | 1338.9 | 1289.3 | 1279.6 | 1299.0 |
| 36°   | 1535.2 | 1416.3 | 1318.7 | 1269.1 | 1259.9 | 1279.6 |
| 36.5° | 1513.9 | 1394.5 | 1298.2 | 1249.4 | 1240.5 | 1260.7 |
| 37°   | 1491.7 | 1372.8 | 1277.2 | 1228.8 | 1221.2 | 1240.9 |
| 37.5° | 1469.5 | 1351.4 | 1256.2 | 1208.7 | 1201.4 | 1222.0 |
| 38°   | 1446.5 | 1329.6 | 1235.3 | 1188.5 | 1181.7 | 1202.2 |
| 38.5° | 1425.2 | 1307.8 | 1214.7 | 1168.8 | 1162.3 | 1183.7 |
| 39°   | 1401.8 | 1286.1 | 1194.2 | 1148.6 | 1143.0 | 1164.3 |
| 39.5° | 1378.4 | 1263.9 | 1173.2 | 1129.2 | 1123.6 | 1144.6 |
| 40°   | 1355.4 | 1241.7 | 1152.2 | 1108.7 | 1103.4 | 1124.8 |
| 40.5° | 1332.0 | 1219.6 | 1131.3 | 1088.9 | 1084.5 | 1106.3 |
| 41°   | 1308.7 | 1197.8 | 1110.7 | 1068.8 | 1065.1 | 1086.1 |
| 41.5° | 1285.3 | 1175.6 | 1089.7 | 1049.4 | 1045.8 | 1067.2 |
| 42°   | 1261.9 | 1153.8 | 1069.2 | 1030.1 | 1026.0 | 1047.8 |
| 42.5° | 1238.5 | 1132.1 | 1048.6 | 1009.9 | 1007.5 | 1028.9 |
| 43°   | 1213.9 | 1109.9 | 1028.5 | 990.6  | 988.5  | 1009.5 |
| 43.5° | 1190.1 | 1087.7 | 1007.5 | 970.8  | 968.8  | 990.6  |



TEST NUMBER: P776248

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

**CANDELA DISTRIBUTION (continued):**

|       | 247.5° | 270°   | 292.5° | 315°  | 337.5° | 360°  |
|-------|--------|--------|--------|-------|--------|-------|
| 45°   | 1118.4 | 1022.0 | 947.0  | 913.2 | 911.9  | 932.5 |
| 45.5° | 1095.0 | 1001.0 | 927.3  | 893.8 | 893.0  | 914.4 |
| 46°   | 1070.4 | 979.7  | 907.5  | 875.3 | 874.4  | 895.0 |
| 46.5° | 1047.0 | 957.9  | 887.8  | 856.3 | 855.5  | 876.1 |
| 47°   | 1022.8 | 936.5  | 867.6  | 837.8 | 837.4  | 857.1 |
| 47.5° | 999.0  | 915.2  | 847.8  | 818.8 | 818.8  | 838.6 |
| 48°   | 975.2  | 894.2  | 828.5  | 799.9 | 800.3  | 819.6 |
| 48.5° | 951.9  | 872.8  | 808.7  | 781.7 | 781.7  | 801.1 |
| 49°   | 928.9  | 852.3  | 790.2  | 763.6 | 763.6  | 782.5 |
| 49.5° | 905.5  | 831.7  | 770.8  | 744.6 | 745.8  | 764.4 |
| 50°   | 881.7  | 810.8  | 751.5  | 726.5 | 728.1  | 745.4 |
| 50.5° | 858.7  | 790.2  | 732.5  | 708.8 | 709.6  | 727.3 |
| 51°   | 837.0  | 769.6  | 714.4  | 691.0 | 691.8  | 709.2 |
| 51.5° | 814.0  | 749.5  | 696.3  | 672.5 | 674.5  | 691.0 |
| 52°   | 791.8  | 729.7  | 677.7  | 655.9 | 657.1  | 673.3 |
| 52.5° | 769.6  | 710.0  | 659.6  | 638.2 | 639.8  | 655.5 |
| 53°   | 748.3  | 689.8  | 642.2  | 620.9 | 622.5  | 637.4 |
| 53.5° | 726.5  | 670.9  | 624.5  | 603.5 | 605.1  | 618.8 |
| 54°   | 706.3  | 651.1  | 607.2  | 587.0 | 588.2  | 601.5 |
| 54.5° | 685.4  | 632.6  | 590.2  | 570.5 | 571.7  | 583.8 |
| 55°   | 664.8  | 613.6  | 573.3  | 553.9 | 555.1  | 566.4 |
| 55.5° | 644.2  | 595.9  | 556.8  | 537.8 | 538.6  | 549.1 |
| 56°   | 624.9  | 577.3  | 540.2  | 522.1 | 522.1  | 531.8 |
| 56.5° | 605.5  | 560.4  | 524.5  | 506.4 | 506.0  | 514.4 |
| 57°   | 586.6  | 542.2  | 508.4  | 490.6 | 489.8  | 497.5 |
| 57.5° | 568.0  | 525.3  | 492.7  | 475.3 | 473.7  | 481.0 |
| 58°   | 549.5  | 508.4  | 477.3  | 460.4 | 458.8  | 464.0 |
| 58.5° | 531.4  | 492.3  | 462.0  | 445.5 | 442.7  | 447.9 |
| 59°   | 513.6  | 475.7  | 447.5  | 431.4 | 427.8  | 431.8 |
| 59.5° | 496.3  | 460.4  | 432.6  | 416.9 | 412.4  | 415.7 |
| 60°   | 479.4  | 444.3  | 418.1  | 403.2 | 397.9  | 400.3 |
| 60.5° | 462.4  | 429.4  | 404.0  | 388.6 | 383.0  | 384.6 |
| 61°   | 446.7  | 414.4  | 389.9  | 375.3 | 368.9  | 369.3 |
| 61.5° | 430.6  | 399.9  | 376.5  | 362.0 | 354.8  | 354.4 |
| 62°   | 415.3  | 385.8  | 362.8  | 349.1 | 341.5  | 339.9 |
| 62.5° | 399.9  | 371.7  | 349.1  | 335.8 | 327.8  | 324.9 |
| 63°   | 385.0  | 358.0  | 336.2  | 322.9 | 314.9  | 311.2 |
| 63.5° | 370.9  | 345.1  | 323.3  | 310.4 | 302.0  | 297.5 |
| 64°   | 356.8  | 331.4  | 310.8  | 297.9 | 289.5  | 284.2 |
| 64.5° | 343.5  | 319.3  | 298.3  | 285.8 | 277.4  | 270.5 |
| 65°   | 330.6  | 306.8  | 286.6  | 273.7 | 265.7  | 258.0 |
| 65.5° | 317.3  | 294.7  | 274.6  | 262.1 | 254.0  | 245.1 |
| 66°   | 304.0  | 282.6  | 262.9  | 250.4 | 242.7  | 232.6 |



TEST NUMBER: P776248

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

**CANDELA DISTRIBUTION (continued):**

|       | 247.5° | 270°  | 292.5° | 315°  | 337.5° | 360°  |
|-------|--------|-------|--------|-------|--------|-------|
| 67.5° | 268.1  | 249.2 | 230.2  | 217.7 | 209.2  | 198.8 |
| 68°   | 256.4  | 238.3 | 220.1  | 207.6 | 198.4  | 188.7 |
| 68.5° | 245.5  | 227.8 | 210.0  | 198.0 | 187.9  | 179.4 |
| 69°   | 234.6  | 217.7 | 200.4  | 188.7 | 177.8  | 170.5 |
| 69.5° | 224.2  | 207.6 | 191.1  | 179.4 | 168.1  | 162.9 |
| 70°   | 214.1  | 198.4 | 182.2  | 170.9 | 159.2  | 158.0 |
| 70.5° | 204.4  | 189.1 | 173.4  | 163.3 | 151.6  | 155.2 |
| 71°   | 194.3  | 180.2 | 164.9  | 155.6 | 145.5  | 152.4 |
| 71.5° | 185.0  | 171.3 | 157.2  | 148.4 | 142.7  | 149.6 |
| 72°   | 176.2  | 162.9 | 149.6  | 142.7 | 139.5  | 146.7 |
| 72.5° | 167.7  | 154.8 | 144.7  | 137.1 | 136.7  | 143.1 |
| 73°   | 158.8  | 147.2 | 137.9  | 131.4 | 133.4  | 139.5 |
| 73.5° | 150.8  | 140.3 | 131.0  | 126.2 | 130.2  | 136.3 |
| 74°   | 143.1  | 133.4 | 124.2  | 120.5 | 126.2  | 132.6 |
| 74.5° | 135.5  | 126.6 | 117.3  | 116.5 | 122.6  | 129.4 |
| 75°   | 127.8  | 119.7 | 111.7  | 112.5 | 118.5  | 125.4 |
| 75.5° | 120.9  | 112.5 | 106.4  | 108.9 | 114.1  | 121.4 |
| 76°   | 113.7  | 106.4 | 101.2  | 105.2 | 109.7  | 116.9 |
| 76.5° | 106.8  | 100.4 | 96.0   | 101.6 | 105.2  | 112.1 |
| 77°   | 100.4  | 94.3  | 91.5   | 97.6  | 100.4  | 107.6 |
| 77.5° | 93.9   | 88.7  | 86.7   | 93.1  | 96.0   | 102.8 |
| 78°   | 87.5   | 83.1  | 82.2   | 89.1  | 91.1   | 98.0  |
| 78.5° | 81.0   | 77.4  | 77.4   | 84.7  | 85.9   | 92.7  |
| 79°   | 75.0   | 72.2  | 73.0   | 80.2  | 80.6   | 87.5  |
| 79.5° | 68.9   | 66.5  | 68.9   | 75.8  | 75.4   | 82.2  |
| 80°   | 63.3   | 61.7  | 64.9   | 71.0  | 69.7   | 77.0  |
| 80.5° | 57.7   | 56.8  | 60.9   | 66.5  | 64.5   | 71.4  |
| 81°   | 52.0   | 52.0  | 56.8   | 61.7  | 59.3   | 65.7  |
| 81.5° | 46.8   | 47.6  | 52.8   | 56.8  | 53.6   | 60.1  |
| 82°   | 41.9   | 42.7  | 48.4   | 52.4  | 48.4   | 54.4  |
| 82.5° | 37.1   | 38.3  | 43.9   | 47.6  | 43.1   | 48.8  |
| 83°   | 31.8   | 34.3  | 39.1   | 43.1  | 37.9   | 42.3  |
| 83.5° | 27.0   | 29.8  | 34.7   | 38.7  | 33.1   | 36.3  |
| 84°   | 22.2   | 25.4  | 29.8   | 34.3  | 28.6   | 30.2  |
| 84.5° | 17.3   | 21.0  | 25.0   | 29.8  | 24.6   | 24.6  |
| 85°   | 12.9   | 16.5  | 20.2   | 25.0  | 21.4   | 19.4  |
| 85.5° | 8.9    | 12.5  | 14.9   | 20.2  | 18.1   | 15.7  |
| 86°   | 5.2    | 8.5   | 11.3   | 15.3  | 14.9   | 13.7  |
| 86.5° | 2.0    | 4.4   | 7.7    | 11.7  | 12.1   | 11.3  |
| 87°   | 0.0    | 0.8   | 4.0    | 8.1   | 9.3    | 9.3   |
| 87.5° | 0.0    | 0.0   | 0.4    | 4.0   | 6.0    | 7.3   |
| 88°   | 0.0    | 0.0   | 0.0    | 0.4   | 3.2    | 5.2   |
| 88.5° | 0.0    | 0.0   | 0.0    | 0.4   | 0.8    | 3.2   |



TEST NUMBER: P776248

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

**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  |

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

Scaled Data Report



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



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

Scaled Data Report





|       |        |        |        |        |        |        |        |        |        |        |        |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 21.5° | 1807.4 | 1859.4 | 1919.8 | 1997.2 | 2081.9 | 2160.1 | 2214.1 | 2237.5 | 2230.3 | 2185.5 | 2121.4 |
| 22°   | 1790.8 | 1843.6 | 1905.3 | 1983.9 | 2069.8 | 2150.4 | 2205.7 | 2229.9 | 2222.2 | 2176.6 | 2110.9 |



|       |       |        |        |        |        |        |        |        |        |        |        |
|-------|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 44°   | 970.8 | 1032.9 | 1091.8 | 1174.0 | 1274.8 | 1395.7 | 1496.1 | 1546.5 | 1526.4 | 1417.9 | 1297.4 |
| 44.5° | 952.3 | 1013.5 | 1072.0 | 1153.4 | 1253.0 | 1371.9 | 1471.1 | 1520.7 | 1499.7 | 1391.3 | 1271.6 |



|       |       |       |       |       |       |       |       |       |       |       |       |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 66.5° | 220.9 | 271.3 | 316.1 | 357.2 | 388.6 | 419.3 | 439.8 | 442.7 | 419.3 | 374.1 | 332.2 |
| 67°   | 209.6 | 258.8 | 303.2 | 344.3 | 374.5 | 404.0 | 423.3 | 425.7 | 401.9 | 359.2 | 318.5 |



|       |     |      |      |      |      |      |     |     |     |     |     |
|-------|-----|------|------|------|------|------|-----|-----|-----|-----|-----|
| 89°   | 1.2 | 10.5 | 21.4 | 25.4 | 21.4 | 16.9 | 9.7 | 2.4 | 0.4 | 0.0 | 0.0 |
| 89.5° | 0.4 | 7.7  | 16.5 | 20.6 | 16.5 | 12.5 | 6.0 | 1.2 | 0.0 | 0.0 | 0.0 |



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

Scaled Data Report





|       |        |        |        |        |        |        |
|-------|--------|--------|--------|--------|--------|--------|
| 21.5° | 2033.9 | 1951.7 | 1872.3 | 1821.5 | 1800.1 | 1807.4 |
| 22°   | 2021.8 | 1936.8 | 1855.3 | 1804.5 | 1783.6 | 1790.8 |

Signify Classified - Internal  
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1121 Highway 74 South  
Peachtree City, GA 30269

Scaled Data Report



|       |        |        |       |       |       |       |
|-------|--------|--------|-------|-------|-------|-------|
| 44°   | 1165.9 | 1065.9 | 987.7 | 951.9 | 949.8 | 970.8 |
| 44.5° | 1143.0 | 1044.2 | 967.2 | 932.1 | 930.9 | 952.3 |

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1121 Highway 74 South  
Peachtree City, GA 30269

Scaled Data Report



|       |       |       |       |       |       |       |
|-------|-------|-------|-------|-------|-------|-------|
| 66.5° | 291.9 | 270.9 | 252.0 | 239.5 | 231.0 | 220.9 |
| 67°   | 279.8 | 259.6 | 240.7 | 228.6 | 220.1 | 209.6 |

Signify Classified - Internal  
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Scaled Data Report



|       |     |     |     |     |     |     |
|-------|-----|-----|-----|-----|-----|-----|
| 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 |

Signify Classified - Internal  
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1121 Highway 74 South  
Peachtree City, GA 30269

Scaled Data Report



(END OF REPORT)