

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: P776258

Luminaire Tested: HCDJBL3040CSD-HCD41TRMW-4000lm-4000K

Issue Date: 2/13/2024

**Test Information**

Test Method: LM-79-2019  
Report Number: P776258  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA ( A2312156B030)  
Test Lab:  
Issue Date: 2/13/2024  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: HALO COMMERCIAL  
Catalog Number: HCDJBL3040CSD-HCD41TRMW-4000lm-4000K  
Description: 4 INCH ROUND SHALLOW-WIDE MATTE WHITE TRIM  
Light Source: SELECTABLE LUMENS AND CCT ARRAY 90CRI / 4000K CCT  
Ballast/Driver: -

**Summary**

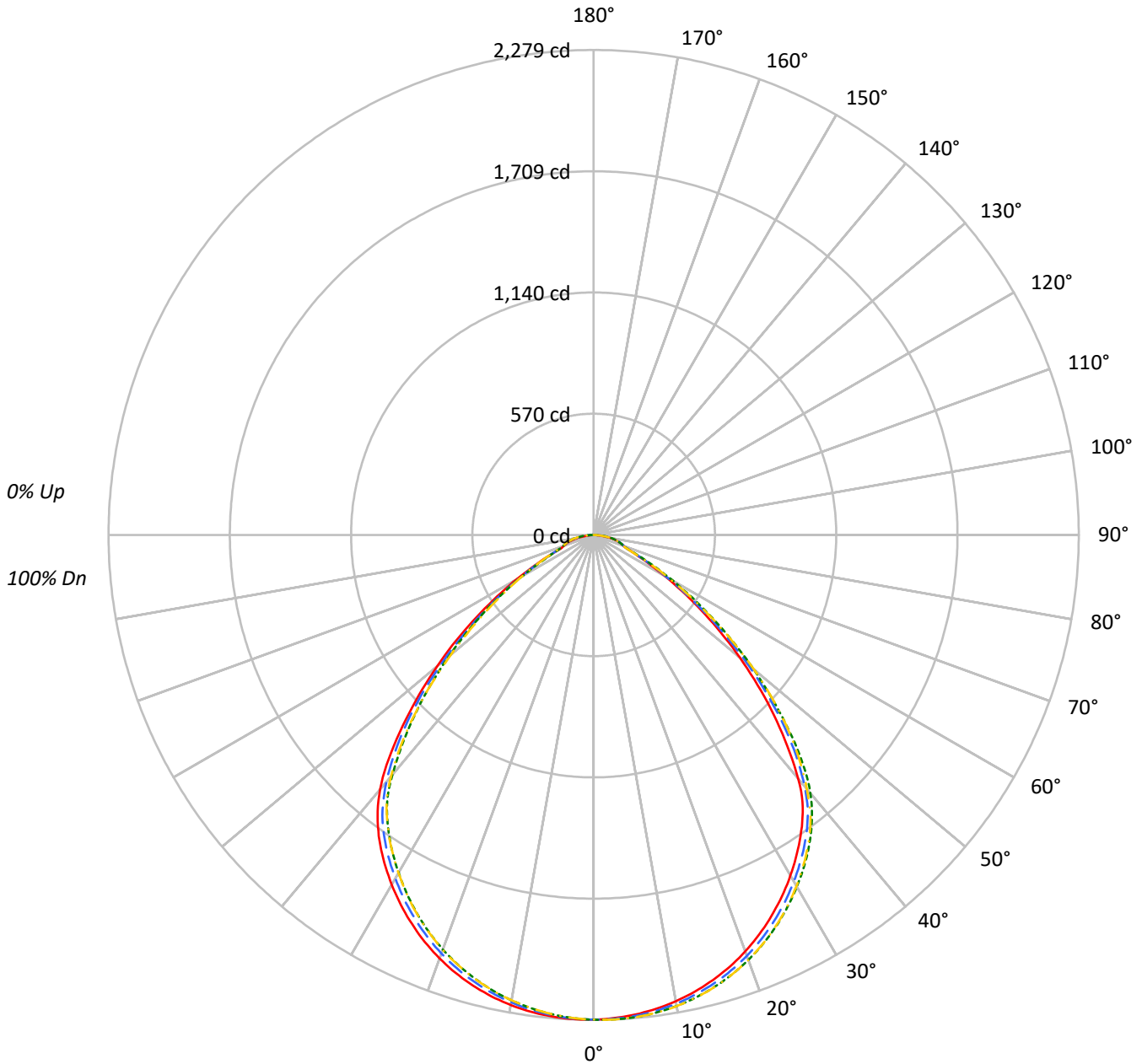
Lumens per Lamp: N/A  
Luminaire Lumens: 4756.0 lumens  
Efficiency: N/A  
Efficacy: 123.5 lumens/watt  
Spacing Criteria (0/90/45): 1.22 / 1.22 / 1.28  
Luminous Opening: Circular (Dia: 0.33' x H: 0')  
CIE Type: Direct

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



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### Luminous Intensity Polar Plot





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**COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:**

RF	20					20					20					20										
RC	80					70					50					30					10					0
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	50	30	10	50	30	10	0		
RCR	0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100	100	100	100	100	100		
	1	111	107	103	100	108	105	102	99	101	98	96	97	95	93	93	92	90	88	88	88	88	88	88		
	2	103	96	90	85	100	94	89	84	90	86	82	87	84	81	84	81	79	77	77	77	77	77	77		
	3	95	86	79	73	93	84	78	73	82	76	72	79	74	70	76	73	69	67	67	67	67	67	67		
	4	88	77	70	64	86	76	69	64	74	68	63	72	66	62	69	65	61	59	59	59	59	59	59		
	5	81	70	62	56	79	69	62	56	67	60	55	65	59	55	63	58	54	52	52	52	52	52	52		
	6	76	64	56	50	74	63	55	50	61	54	49	60	54	49	58	53	49	47	47	47	47	47	47		
	7	71	58	50	45	69	57	50	45	56	49	44	55	49	44	53	48	44	42	42	42	42	42	42		
	8	66	54	46	40	64	53	45	40	52	45	40	50	44	40	49	44	40	38	38	38	38	38	38		
	9	62	49	42	37	60	49	42	37	48	41	36	47	41	36	46	40	36	34	34	34	34	34	34		
	10	58	46	38	33	57	45	38	33	44	38	33	43	37	33	43	37	33	31	31	31	31	31	31		

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

	0°	90°	180°	270°
0°	286635	286635	286635	286635
5°	285798	287326	286972	285595
10°	284310	287249	286636	283799
15°	282154	286402	285620	281203
20°	278902	284634	283549	277549
25°	274401	281733	280275	272554
30°	268593	277443	275742	266311
35°	261178	271641	269413	258566
40°	245508	260211	256433	241466
45°	213094	230731	225784	210282
50°	175445	191793	187917	173957
55°	135509	149925	147006	135509
60°	96703	107652	105412	97106
65°	65662	70337	68550	65781
70°	54752	54421	54900	55930
75°	57620	58009	55675	60781
80°	53776	59864	48775	64284
85°	29746	54726	20937	62235

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 112.5°  
 Vertical Angle: 45°  
 Luminance: 234398 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	215.3	4.5
10°-20°	614.3	12.9
20°-30°	918.9	19.3
30°-40°	1074.5	22.6
40°-50°	950.3	20.0
50°-60°	578.3	12.2
60°-70°	241.0	5.1
70°-80°	125.0	2.6
80°-90°	38.3	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°	1748.6	36.8
0°-40°	2823.1	59.4
0°-60°	4351.7	91.5
0°-90°	4756.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4756.0	100.0

**CANDELA DISTRIBUTION:**

	0°	90°	180°	270°	360°	Flux
0°	2278	2278	2278	2278	2278	
5°	2262	2274	2272	2261	2262	215
15°	2166	2198	2192	2158	2166	611
25°	1976	2029	2018	1963	1976	910
35°	1700	1768	1754	1683	1700	1059
45°	1197	1296	1269	1182	1197	920
55°	618	683	670	618	618	556
65°	220	236	230	221	220	232
75°	118	119	114	125	118	122
85°	21	38	14	43	21	30
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°	2277.6	2277.6	2277.6	2277.6	2277.6	2277.6	2277.6	2277.6	2277.6	2277.6	2277.6
0.5°	2277.2	2277.6	2278.0	2277.2	2278.8	2279.2	2278.4	2278.0	2278.0	2278.0	2277.6
1°	2276.4	2277.2	2277.6	2277.6	2279.2	2279.6	2279.2	2278.4	2278.0	2278.0	2277.2
1.5°	2275.2	2276.4	2277.2	2277.6	2279.2	2280.0	2279.2	2278.4	2278.0	2277.6	2276.4
2°	2274.0	2275.2	2276.8	2277.2	2279.2	2280.0	2279.2	2278.4	2277.6	2276.8	2275.6
2.5°	2272.4	2274.0	2276.0	2276.8	2278.8	2280.0	2279.2	2278.0	2277.2	2276.0	2274.4
3°	2270.8	2272.8	2274.8	2276.0	2278.4	2279.6	2278.4	2277.6	2276.4	2275.2	2273.2
3.5°	2269.2	2271.2	2273.6	2275.2	2277.6	2279.2	2278.0	2276.8	2275.6	2273.6	2271.6
4°	2267.1	2269.2	2272.0	2274.0	2276.8	2278.4	2276.8	2275.6	2274.4	2272.4	2269.6
4.5°	2264.7	2267.1	2270.0	2272.4	2275.6	2277.2	2276.0	2274.4	2272.8	2270.8	2267.6
5°	2262.3	2265.1	2268.0	2270.8	2274.4	2276.0	2274.4	2273.2	2271.6	2268.8	2265.1
5.5°	2259.5	2262.3	2265.9	2269.2	2272.4	2274.8	2272.8	2271.2	2269.6	2266.3	2262.7
6°	2256.3	2259.9	2263.5	2267.1	2270.8	2272.8	2271.2	2269.6	2267.6	2264.3	2259.9
6.5°	2253.0	2256.7	2261.1	2264.7	2268.8	2271.2	2269.2	2267.6	2265.5	2261.9	2257.1
7°	2249.8	2253.4	2258.3	2262.3	2266.3	2268.8	2266.7	2265.1	2262.7	2259.1	2254.2
7.5°	2246.2	2250.2	2255.1	2259.5	2263.9	2266.7	2264.3	2262.7	2259.9	2255.9	2250.6
8°	2242.6	2246.6	2252.2	2256.7	2260.7	2263.9	2261.5	2259.9	2257.1	2252.6	2247.0
8.5°	2238.5	2243.0	2248.2	2253.4	2257.9	2261.5	2258.7	2256.7	2253.8	2249.4	2243.4
9°	2234.1	2238.9	2244.6	2250.2	2254.7	2258.3	2255.5	2253.4	2250.6	2245.4	2239.3
9.5°	2229.7	2234.5	2240.9	2246.2	2251.4	2255.1	2252.2	2250.2	2247.0	2241.8	2234.9
10°	2224.8	2230.1	2236.5	2242.6	2247.8	2251.4	2248.6	2246.6	2243.0	2237.7	2230.5
10.5°	2220.0	2225.6	2232.1	2238.1	2243.8	2247.8	2244.6	2242.6	2238.9	2233.3	2226.0
11°	2214.7	2220.4	2227.6	2234.1	2239.7	2243.8	2240.5	2238.1	2234.9	2228.4	2220.8
11.5°	2209.5	2215.5	2222.8	2229.7	2235.3	2239.7	2236.1	2234.1	2230.1	2223.6	2215.5
12°	2203.9	2209.9	2217.6	2224.4	2230.9	2235.3	2231.7	2229.7	2225.6	2218.8	2210.3
12.5°	2197.8	2204.3	2212.3	2219.6	2226.0	2230.9	2226.8	2224.4	2220.8	2213.5	2204.7
13°	2192.2	2198.6	2206.7	2214.3	2220.8	2226.0	2221.6	2219.6	2215.5	2207.9	2199.0
13.5°	2185.3	2192.6	2200.6	2209.1	2215.5	2220.8	2216.4	2214.3	2209.9	2202.2	2193.0
14°	2179.3	2186.5	2195.0	2203.5	2209.9	2215.5	2211.1	2208.7	2204.3	2196.2	2186.5
14.5°	2172.4	2180.1	2188.5	2197.4	2204.3	2209.9	2205.1	2202.6	2198.2	2190.2	2180.1
15°	2165.6	2173.2	2182.5	2191.4	2198.2	2204.3	2199.4	2197.0	2192.2	2183.7	2173.2
15.5°	2158.3	2166.0	2175.6	2184.5	2192.2	2197.8	2193.0	2190.6	2185.7	2177.3	2166.4
16°	2150.6	2158.7	2168.4	2178.1	2185.7	2191.8	2186.1	2184.1	2178.9	2170.0	2159.1
16.5°	2143.0	2151.5	2161.5	2171.2	2178.9	2184.9	2179.7	2177.3	2172.4	2163.1	2151.5
17°	2135.3	2143.8	2154.3	2163.9	2172.0	2178.1	2172.8	2170.0	2164.8	2155.9	2143.8
17.5°	2127.3	2135.7	2146.6	2157.1	2164.8	2171.2	2165.2	2162.7	2157.5	2147.8	2135.7
18°	2118.8	2127.7	2138.6	2149.4	2157.5	2163.5	2157.9	2155.5	2150.2	2140.2	2127.7
18.5°	2109.9	2119.2	2130.5	2141.4	2149.8	2155.9	2150.2	2147.8	2142.2	2132.1	2119.2
19°	2101.1	2110.7	2122.0	2133.3	2141.8	2148.2	2142.2	2139.8	2134.5	2124.0	2110.7
19.5°	2091.8	2101.9	2113.6	2125.3	2133.7	2140.2	2133.7	2131.7	2126.1	2115.2	2101.9
20°	2082.5	2092.6	2104.7	2116.8	2125.3	2132.1	2125.3	2122.8	2117.2	2106.7	2092.6
20.5°	2073.2	2083.3	2095.8	2107.9	2116.8	2123.2	2116.4	2114.0	2108.3	2097.4	2082.9
21°	2062.8	2073.7	2086.1	2099.0	2107.9	2114.8	2107.5	2105.1	2099.5	2088.2	2073.7

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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°	2032.1	2043.4	2057.1	2070.4	2080.1	2087.0	2078.9	2076.9	2070.8	2059.1	2043.4
23°	2021.2	2032.9	2046.6	2060.8	2070.4	2077.3	2068.8	2066.8	2060.8	2049.1	2032.5
23.5°	2010.4	2022.1	2036.2	2050.3	2060.3	2067.2	2058.7	2056.3	2050.7	2038.2	2022.1
24°	1999.1	2011.2	2025.7	2040.2	2049.9	2057.1	2048.3	2045.8	2040.2	2027.7	2011.2
24.5°	1987.8	1999.9	2014.8	2029.3	2039.4	2046.6	2037.8	2035.4	2029.3	2016.8	1999.9
25°	1976.1	1988.2	2003.5	2018.4	2028.9	2035.8	2026.5	2024.5	2018.4	2005.9	1988.6
25.5°	1964.4	1976.9	1992.2	2007.5	2018.0	2024.9	2015.6	2013.2	2007.5	1994.6	1976.9
26°	1951.9	1965.2	1980.5	1996.3	2006.7	2014.0	2004.3	2001.9	1996.3	1982.9	1964.8
26.5°	1940.2	1953.1	1968.8	1985.0	1995.0	2002.7	1992.6	1990.2	1984.2	1971.7	1953.1
27°	1927.7	1940.6	1956.7	1972.9	1983.8	1991.4	1980.5	1978.5	1972.5	1959.6	1941.0
27.5°	1914.8	1928.5	1945.1	1961.2	1971.7	1979.3	1968.8	1966.4	1960.8	1947.1	1928.5
28°	1901.9	1915.6	1932.2	1949.1	1959.6	1967.2	1956.3	1954.3	1948.3	1935.4	1915.6
28.5°	1888.6	1902.7	1919.7	1936.6	1947.9	1955.1	1943.8	1941.8	1935.8	1922.1	1902.7
29°	1875.7	1889.4	1906.8	1924.1	1935.0	1942.6	1930.9	1929.3	1923.3	1910.0	1889.8
29.5°	1862.0	1876.5	1893.9	1911.2	1922.5	1930.1	1918.0	1916.4	1910.4	1896.7	1876.9
30°	1848.3	1863.2	1880.6	1898.3	1909.2	1917.2	1905.1	1903.1	1897.5	1883.8	1863.2
30.5°	1834.2	1849.5	1867.3	1885.4	1896.3	1903.9	1891.8	1889.8	1884.2	1870.1	1849.5
31°	1820.1	1835.4	1854.0	1871.7	1883.0	1891.0	1878.1	1876.1	1870.5	1856.8	1835.8
31.5°	1806.0	1821.7	1839.8	1858.4	1869.3	1877.3	1864.4	1862.4	1856.8	1843.1	1822.5
32°	1791.9	1807.6	1825.7	1844.7	1855.6	1863.6	1850.3	1848.7	1843.1	1829.8	1808.0
32.5°	1777.0	1793.1	1812.0	1830.6	1842.3	1849.9	1836.2	1834.6	1829.0	1815.7	1793.5
33°	1762.4	1778.6	1797.5	1816.5	1827.7	1835.8	1821.7	1820.1	1814.8	1801.1	1779.0
33.5°	1747.5	1763.7	1783.0	1802.4	1813.2	1821.3	1807.2	1805.2	1799.9	1786.2	1764.1
34°	1731.8	1748.7	1767.7	1787.4	1798.7	1806.8	1791.5	1789.9	1784.6	1770.9	1748.7
34.5°	1716.5	1733.0	1752.8	1772.1	1783.8	1791.1	1776.6	1774.5	1769.3	1756.0	1733.4
35°	1700.0	1717.3	1737.0	1756.8	1768.1	1775.7	1760.4	1758.8	1753.6	1740.3	1717.7
35.5°	1683.8	1701.2	1720.9	1741.1	1752.4	1760.0	1744.7	1742.7	1737.9	1724.1	1701.6
36°	1667.3	1684.6	1704.8	1725.0	1736.6	1744.3	1727.8	1725.4	1720.9	1707.2	1684.6
36.5°	1650.0	1667.7	1687.9	1708.8	1719.7	1727.4	1710.0	1708.0	1703.2	1689.9	1667.3
37°	1632.2	1650.0	1670.1	1690.7	1702.0	1709.6	1692.3	1690.3	1685.4	1672.1	1649.6
37.5°	1613.3	1631.8	1652.4	1673.4	1684.2	1691.9	1672.9	1671.7	1667.3	1653.6	1629.0
38°	1593.5	1612.5	1634.2	1654.8	1665.7	1673.8	1652.0	1651.6	1648.4	1633.8	1607.6
38.5°	1571.4	1590.3	1612.5	1635.9	1646.7	1654.0	1629.4	1629.0	1627.8	1613.7	1585.9
39°	1548.0	1566.1	1589.1	1614.9	1626.6	1633.0	1606.0	1606.4	1606.4	1591.9	1562.1
39.5°	1522.2	1541.5	1566.1	1593.5	1605.6	1610.9	1582.7	1582.7	1584.3	1568.9	1538.7
40°	1494.4	1515.3	1541.9	1569.8	1583.9	1587.1	1558.1	1557.3	1560.9	1544.8	1513.3
40.5°	1465.7	1487.5	1516.1	1546.0	1560.5	1562.5	1533.5	1532.3	1535.9	1519.4	1489.5
41°	1436.7	1459.7	1490.3	1520.2	1535.9	1537.5	1508.9	1507.3	1509.3	1493.6	1462.5
41.5°	1407.7	1431.5	1463.3	1494.0	1509.3	1512.1	1483.1	1480.7	1481.9	1467.0	1436.3
42°	1377.1	1402.1	1436.3	1467.0	1481.9	1485.9	1457.3	1454.9	1453.7	1439.5	1408.9
42.5°	1347.6	1372.6	1408.5	1439.5	1452.8	1458.9	1430.3	1427.4	1424.2	1410.9	1381.1
43°	1317.8	1343.6	1380.3	1410.9	1423.0	1431.1	1403.3	1399.6	1394.0	1381.9	1352.1
43.5°	1288.0	1314.2	1350.0	1381.9	1391.6	1403.7	1375.8	1371.4	1362.5	1352.1	1323.8

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**CANDELA DISTRIBUTION (continued):**

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
45°	1197.3	1225.9	1259.8	1290.0	1296.4	1317.0	1289.6	1283.9	1268.6	1258.5	1234.0
45.5°	1167.0	1196.1	1228.7	1258.1	1263.8	1286.0	1261.0	1253.7	1236.8	1226.3	1203.7
46°	1137.2	1166.2	1197.3	1225.5	1230.7	1255.7	1230.3	1222.3	1205.3	1194.0	1171.9
46.5°	1107.0	1136.0	1165.8	1192.8	1198.9	1224.7	1200.1	1191.6	1173.9	1161.8	1140.4
47°	1075.9	1106.2	1134.4	1159.8	1167.4	1192.8	1169.9	1161.0	1143.2	1129.5	1109.4
47.5°	1045.7	1075.5	1101.7	1127.1	1135.6	1161.0	1140.0	1129.1	1112.6	1098.1	1078.3
48°	1015.5	1044.5	1070.7	1094.1	1104.1	1129.1	1108.6	1097.7	1081.6	1065.4	1046.1
48.5°	985.2	1014.3	1038.4	1061.0	1073.1	1097.3	1078.3	1065.9	1050.9	1034.0	1015.5
49°	955.4	983.6	1007.0	1028.8	1041.7	1065.9	1046.1	1034.8	1020.7	1002.2	983.6
49.5°	925.6	952.2	975.6	996.1	1010.2	1033.6	1014.3	1003.4	990.1	971.1	952.6
50°	896.1	921.9	943.7	963.9	979.6	1002.2	983.2	971.9	959.8	939.7	921.5
50.5°	866.7	890.9	912.3	931.6	948.9	970.7	950.6	941.3	929.2	909.4	890.5
51°	837.3	860.7	881.2	900.2	917.9	938.9	919.9	911.1	899.8	879.6	860.3
51.5°	809.1	831.2	850.6	868.7	887.7	909.0	887.7	880.4	870.3	849.4	830.4
52°	780.4	801.4	819.9	838.5	857.8	878.0	855.4	849.8	841.7	819.1	800.6
52.5°	752.6	772.0	789.7	808.3	827.6	847.0	824.8	819.9	811.9	790.1	770.4
53°	724.8	743.0	759.1	778.4	798.2	816.3	793.7	790.5	782.5	760.7	741.3
53.5°	697.4	714.3	729.6	749.0	768.3	786.9	763.5	760.7	753.4	732.9	712.7
54°	670.4	686.1	699.8	720.4	740.1	757.1	732.1	731.7	726.4	704.3	685.3
54.5°	643.8	657.5	671.6	691.8	711.9	728.0	702.6	703.4	698.2	676.8	657.9
55°	617.6	630.5	643.8	664.3	683.3	699.8	673.2	675.2	670.0	649.4	630.1
55.5°	592.2	603.9	615.6	636.9	655.5	671.2	644.2	647.4	642.6	623.2	603.5
56°	567.2	577.7	588.2	610.7	628.1	642.2	616.0	619.2	616.8	596.6	578.1
56.5°	542.2	551.5	562.4	584.5	601.5	614.8	588.2	592.6	589.8	571.2	552.7
57°	518.0	526.5	536.6	559.1	574.8	588.2	561.1	566.0	563.6	546.6	528.1
57.5°	494.2	501.5	511.2	533.7	549.0	561.1	534.9	540.2	538.2	522.4	503.5
58°	470.8	477.3	486.2	509.9	523.3	534.5	509.5	514.8	514.0	498.7	480.5
58.5°	448.3	453.9	462.8	485.8	499.5	509.1	484.6	489.0	489.0	475.7	457.9
59°	426.5	431.3	440.6	463.6	474.5	484.1	460.4	464.4	464.8	453.1	435.4
59.5°	405.1	409.2	418.4	440.2	450.7	459.6	436.6	441.0	441.4	430.9	414.4
60°	384.2	387.8	397.5	418.4	427.7	435.4	413.6	417.6	418.8	409.6	393.8
60.5°	364.4	367.2	376.9	397.1	405.5	412.4	392.2	394.7	396.7	389.0	373.7
61°	344.7	347.5	357.2	376.5	383.8	390.6	372.5	373.3	375.3	370.1	356.0
61.5°	326.1	328.9	338.6	356.0	364.0	370.5	352.3	353.5	355.6	351.1	338.6
62°	308.4	311.2	320.5	337.0	344.3	349.9	332.6	333.4	335.8	332.2	320.9
62.5°	291.5	293.9	303.1	318.1	324.9	329.8	312.8	313.2	316.0	313.2	303.1
63°	275.3	277.3	286.6	299.9	305.2	309.2	293.1	293.5	296.7	294.3	285.4
63.5°	260.4	262.0	270.9	282.6	285.4	289.0	274.9	275.7	279.4	277.3	269.7
64°	245.9	247.9	256.0	265.7	268.5	271.3	258.4	258.4	262.4	261.6	254.8
64.5°	232.2	234.2	241.9	250.3	252.0	254.8	243.1	243.1	246.3	246.3	241.1
65°	220.5	221.7	228.6	235.8	236.2	239.1	228.2	228.6	230.2	232.2	228.2
65.5°	209.2	210.4	216.5	222.1	221.7	224.1	214.5	214.9	214.9	219.3	216.1
66°	198.3	199.9	205.2	209.2	208.0	210.8	202.0	202.4	200.4	206.4	204.8





TEST NUMBER: P776258

CATALOG NUMBER: HCDJBL3040CSD-HCD41TRMW-4000lm-4000K

**CANDELA DISTRIBUTION (continued):**

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
67.5°	172.1	174.1	176.6	177.8	175.4	178.2	171.3	172.9	168.5	176.2	177.4
68°	165.3	167.3	168.9	169.7	167.3	169.7	164.1	165.7	161.7	168.9	170.1
68.5°	158.8	161.7	162.5	162.5	160.4	162.5	158.4	159.6	157.6	162.5	163.7
69°	154.4	156.8	156.4	156.4	155.2	156.8	154.0	154.8	154.8	157.6	158.4
69.5°	151.6	152.4	152.0	151.6	150.8	152.0	150.8	151.6	152.0	153.6	154.8
70°	148.8	148.8	148.8	148.3	147.9	149.2	148.3	148.8	149.2	150.8	152.0
70.5°	145.9	146.3	147.1	145.9	145.5	146.7	145.9	145.9	146.3	147.9	149.6
71°	143.1	143.5	144.3	143.1	142.7	143.9	143.1	142.7	143.1	145.1	147.1
71.5°	140.7	140.7	141.9	140.7	140.3	141.5	140.3	139.9	140.3	141.9	144.3
72°	137.9	137.9	139.1	138.3	137.5	138.7	137.5	136.7	136.7	138.7	141.5
72.5°	135.4	135.4	136.3	135.9	134.6	135.9	134.6	133.4	133.4	135.4	138.7
73°	132.2	132.2	133.4	133.0	131.8	133.0	131.4	129.8	129.8	132.2	135.4
73.5°	129.0	129.0	130.6	129.8	129.0	129.8	128.2	126.2	126.2	128.6	132.2
74°	125.4	125.8	127.4	127.0	125.8	127.0	125.0	122.5	122.5	125.0	129.0
74.5°	121.7	122.1	124.2	124.2	122.5	123.8	121.7	118.9	118.5	121.3	125.8
75°	118.5	118.5	120.9	120.9	119.3	120.5	118.1	114.9	114.5	117.3	122.1
75.5°	114.5	114.9	117.7	117.7	116.1	117.3	114.5	110.9	110.5	113.3	118.5
76°	110.5	110.9	114.1	114.5	112.9	114.1	110.9	106.8	106.0	109.2	114.9
76.5°	106.8	107.2	110.5	110.9	109.2	110.5	106.8	102.8	102.0	104.8	111.3
77°	102.4	103.2	106.8	107.6	105.6	106.8	103.2	98.4	97.2	100.4	107.6
77.5°	98.0	98.8	103.2	104.0	102.0	103.2	99.2	93.9	92.3	95.5	103.2
78°	93.5	94.7	99.2	100.4	98.4	99.6	94.7	89.1	87.5	91.1	99.2
78.5°	89.1	90.3	95.1	96.7	94.3	95.5	90.7	84.3	82.6	86.3	94.7
79°	84.3	85.5	91.1	92.7	90.7	91.5	86.3	79.4	77.8	81.4	90.7
79.5°	79.4	81.0	87.1	88.7	86.7	87.9	81.8	74.6	72.6	76.2	86.3
80°	74.2	75.8	82.6	84.7	82.6	83.4	77.4	69.7	67.3	70.9	81.4
80.5°	69.3	70.9	78.2	80.6	78.2	79.4	73.0	64.5	62.1	66.1	77.0
81°	64.5	66.1	73.8	76.6	74.2	75.0	68.5	59.3	56.4	60.5	72.2
81.5°	58.9	60.9	69.3	72.2	69.7	70.5	63.7	54.0	51.2	55.2	67.3
82°	53.6	55.6	64.5	67.7	65.3	66.5	59.3	48.8	45.6	50.0	62.9
82.5°	48.4	50.4	60.1	63.3	60.9	61.7	54.8	43.9	40.3	44.3	58.0
83°	42.7	45.1	55.6	58.9	56.4	57.2	50.4	39.5	34.7	39.9	53.6
83.5°	37.1	39.9	51.2	54.4	52.0	52.8	46.0	35.1	29.4	35.5	48.8
84°	31.4	34.7	46.8	50.0	47.6	48.4	41.5	30.6	23.8	31.0	44.7
84.5°	25.8	29.8	42.3	45.1	42.7	43.5	37.1	26.6	18.1	26.2	40.3
85°	20.6	25.8	38.3	40.7	37.9	38.7	32.7	22.2	14.5	21.8	35.9
85.5°	15.7	22.6	33.9	35.9	33.1	33.9	27.8	18.9	12.5	19.3	31.8
86°	13.7	19.8	29.4	31.0	28.2	29.0	23.4	16.1	10.9	16.5	27.4
86.5°	11.7	16.5	24.6	26.2	23.4	24.2	18.9	13.3	8.9	14.1	23.0
87°	9.7	13.7	20.2	21.0	18.5	18.9	14.5	10.1	7.3	11.3	18.5
87.5°	7.3	10.9	15.3	16.1	13.7	14.1	9.7	7.3	5.2	8.9	14.1
88°	5.2	8.1	11.7	12.1	8.9	9.7	5.6	4.4	3.2	6.0	9.7
88.5°	3.6	5.2	8.1	8.1	4.8	5.2	2.0	2.0	2.0	3.6	5.6



TEST NUMBER: P776258

CATALOG NUMBER: HCDJBL3040CSD-HCD41TRMW-4000lm-4000K

**CANDELA DISTRIBUTION (continued):**

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



TEST NUMBER: P776258

CATALOG NUMBER: HCDJBL3040CSD-HCD41TRMW-4000lm-4000K

**CANDELA DISTRIBUTION (continued):**

	247.5°	270°	292.5°	315°	337.5°	360°
0°	2277.6	2277.6	2277.6	2277.6	2277.6	2277.6
0.5°	2276.4	2277.6	2277.6	2277.2	2276.8	2277.2
1°	2275.6	2276.8	2276.0	2276.4	2276.0	2276.4
1.5°	2274.8	2275.6	2274.8	2274.8	2274.8	2275.2
2°	2273.2	2274.0	2273.2	2273.6	2273.2	2274.0
2.5°	2272.0	2272.4	2271.6	2272.0	2271.6	2272.4
3°	2270.4	2270.4	2269.2	2270.0	2269.6	2270.8
3.5°	2268.4	2268.4	2267.1	2268.0	2268.0	2269.2
4°	2266.3	2266.3	2264.3	2265.5	2265.5	2267.1
4.5°	2263.9	2263.5	2261.9	2263.1	2263.1	2264.7
5°	2261.1	2260.7	2259.1	2260.3	2260.3	2262.3
5.5°	2258.3	2257.9	2255.9	2257.1	2257.5	2259.5
6°	2255.5	2254.7	2252.2	2254.2	2254.2	2256.3
6.5°	2252.2	2251.4	2248.6	2250.6	2251.0	2253.0
7°	2249.0	2247.8	2245.0	2247.0	2247.4	2249.8
7.5°	2245.0	2243.8	2240.9	2243.0	2243.4	2246.2
8°	2241.3	2239.7	2236.5	2238.9	2239.7	2242.6
8.5°	2236.9	2234.9	2232.5	2234.9	2235.3	2238.5
9°	2232.9	2230.5	2227.6	2230.5	2231.3	2234.1
9.5°	2228.0	2225.6	2222.8	2225.6	2226.4	2229.7
10°	2223.2	2220.8	2217.6	2220.4	2221.6	2224.8
10.5°	2218.4	2215.5	2211.9	2215.5	2216.8	2220.0
11°	2212.7	2210.3	2206.3	2209.9	2211.5	2214.7
11.5°	2207.5	2204.7	2200.6	2204.3	2205.9	2209.5
12°	2201.8	2198.6	2194.6	2198.6	2199.8	2203.9
12.5°	2195.8	2192.2	2188.1	2192.6	2194.2	2197.8
13°	2189.7	2186.1	2181.7	2186.1	2187.7	2192.2
13.5°	2182.9	2179.3	2175.2	2179.7	2181.3	2185.3
14°	2176.4	2172.8	2168.4	2173.2	2174.4	2179.3
14.5°	2169.6	2165.6	2161.1	2166.0	2167.6	2172.4
15°	2162.3	2158.3	2153.5	2159.1	2160.7	2165.6
15.5°	2155.1	2151.0	2146.2	2151.5	2153.1	2158.3
16°	2147.4	2143.0	2138.1	2143.8	2145.4	2150.6
16.5°	2139.8	2135.3	2130.1	2135.7	2137.7	2143.0
17°	2131.7	2126.9	2121.6	2127.7	2129.7	2135.3
17.5°	2123.2	2118.4	2113.2	2119.2	2121.2	2127.3
18°	2114.8	2109.5	2103.9	2110.7	2112.8	2118.8
18.5°	2105.9	2100.7	2095.0	2101.9	2103.9	2109.9
19°	2097.0	2091.4	2085.7	2092.6	2094.6	2101.1
19.5°	2087.8	2082.1	2076.1	2083.3	2085.3	2091.8
20°	2078.5	2072.4	2066.4	2073.7	2076.1	2082.5
20.5°	2068.4	2062.4	2055.9	2063.6	2066.8	2073.2
21°	2058.3	2051.9	2045.4	2053.9	2056.7	2062.8



TEST NUMBER: P776258

CATALOG NUMBER: HCDJBL3040CSD-HCD41TRMW-4000lm-4000K

**CANDELA DISTRIBUTION (continued):**

	247.5°	270°	292.5°	315°	337.5°	360°
22.5°	2027.3	2020.4	2013.2	2022.1	2025.3	2032.1
23°	2016.4	2009.6	2001.9	2011.2	2014.4	2021.2
23.5°	2005.5	1998.7	1990.6	1999.9	2003.1	2010.4
24°	1994.2	1986.6	1978.9	1988.2	1991.4	1999.1
24.5°	1982.5	1974.9	1967.2	1976.9	1980.1	1987.8
25°	1970.9	1962.8	1955.1	1964.8	1968.4	1976.1
25.5°	1958.8	1950.7	1942.2	1952.7	1956.3	1964.4
26°	1946.7	1938.2	1930.1	1940.6	1944.2	1951.9
26.5°	1934.2	1926.1	1917.6	1927.7	1931.8	1940.2
27°	1921.7	1913.2	1904.3	1915.2	1919.3	1927.7
27.5°	1909.2	1900.3	1891.4	1902.3	1906.4	1914.8
28°	1896.3	1886.6	1878.1	1889.0	1893.1	1901.9
28.5°	1883.0	1873.7	1864.4	1875.3	1880.2	1888.6
29°	1869.7	1860.4	1851.1	1861.6	1866.4	1875.7
29.5°	1856.0	1846.7	1836.6	1848.3	1852.7	1862.0
30°	1842.7	1832.6	1823.3	1834.2	1839.0	1848.3
30.5°	1828.6	1818.5	1808.8	1820.1	1824.9	1834.2
31°	1814.8	1804.4	1794.7	1806.4	1810.8	1820.1
31.5°	1800.7	1790.3	1779.4	1791.5	1796.3	1806.0
32°	1786.2	1775.3	1765.3	1777.0	1781.8	1791.9
32.5°	1771.7	1760.8	1750.3	1762.0	1767.3	1777.0
33°	1756.8	1745.9	1735.4	1747.1	1752.4	1762.4
33.5°	1741.9	1730.6	1719.7	1732.2	1737.4	1747.5
34°	1726.2	1715.3	1704.0	1716.5	1721.7	1731.8
34.5°	1710.4	1699.2	1688.3	1700.8	1706.0	1716.5
35°	1694.7	1683.0	1671.7	1684.2	1689.9	1700.0
35.5°	1678.2	1666.5	1654.8	1667.7	1673.4	1683.8
36°	1661.3	1649.6	1637.9	1651.6	1656.8	1667.3
36.5°	1643.9	1632.2	1620.5	1633.8	1639.1	1650.0
37°	1625.8	1614.1	1602.4	1616.1	1621.3	1632.2
37.5°	1605.2	1594.7	1583.1	1598.0	1603.2	1613.3
38°	1582.2	1573.4	1560.9	1579.0	1583.5	1593.5
38.5°	1558.9	1550.4	1536.7	1556.9	1560.1	1571.4
39°	1534.3	1525.4	1512.9	1532.3	1536.7	1548.0
39.5°	1508.9	1498.0	1487.1	1506.9	1511.7	1522.2
40°	1482.7	1469.8	1459.3	1480.3	1485.5	1494.4
40.5°	1456.1	1441.6	1431.5	1452.8	1457.3	1465.7
41°	1428.7	1412.9	1402.5	1425.0	1429.1	1436.7
41.5°	1400.4	1383.5	1373.0	1397.2	1399.6	1407.7
42°	1371.8	1355.3	1343.6	1368.2	1369.8	1377.1
42.5°	1343.2	1327.1	1313.0	1339.2	1339.6	1347.6
43°	1314.2	1298.5	1282.7	1309.7	1309.7	1317.8
43.5°	1285.6	1269.0	1251.7	1279.5	1278.7	1288.0

TEST NUMBER: P776258

CATALOG NUMBER: HCDJBL3040CSD-HCD41TRMW-4000lm-4000K

**CANDELA DISTRIBUTION (continued):**

	247.5°	270°	292.5°	315°	337.5°	360°
45°	1198.5	1181.5	1161.0	1186.8	1185.6	1197.3
45.5°	1169.5	1152.1	1130.8	1155.3	1154.1	1167.0
46°	1140.4	1123.5	1100.9	1123.9	1123.1	1137.2
46.5°	1111.4	1093.3	1070.7	1093.3	1092.1	1107.0
47°	1081.2	1063.4	1041.3	1061.0	1061.0	1075.9
47.5°	1052.1	1034.0	1011.0	1029.6	1030.4	1045.7
48°	1022.7	1004.6	981.6	997.3	1000.1	1015.5
48.5°	992.9	974.7	951.4	967.1	969.9	985.2
49°	962.7	946.1	923.1	935.2	940.1	955.4
49.5°	932.8	917.5	894.5	905.0	910.2	925.6
50°	903.0	888.5	865.1	874.0	880.8	896.1
50.5°	873.6	859.9	836.5	844.5	851.4	866.7
51°	844.5	832.4	808.3	814.7	822.0	837.3
51.5°	815.1	804.2	780.4	786.1	792.9	809.1
52°	786.1	776.8	752.6	757.5	764.7	780.4
52.5°	757.5	749.4	724.8	730.5	736.9	752.6
53°	729.2	722.4	697.8	702.6	709.5	724.8
53.5°	701.4	695.8	671.6	675.6	682.1	697.4
54°	673.6	668.8	645.0	649.8	655.1	670.4
54.5°	646.6	643.0	619.6	624.4	628.9	643.8
55°	620.0	617.6	594.6	599.0	603.9	617.6
55.5°	593.8	592.2	570.0	575.3	578.9	592.2
56°	568.0	566.8	545.4	551.5	553.9	567.2
56.5°	543.0	542.6	522.0	528.5	530.1	542.2
57°	518.0	518.4	499.1	505.9	507.1	518.0
57.5°	493.8	495.0	476.5	483.7	484.6	494.2
58°	470.8	472.1	455.1	463.2	462.4	470.8
58.5°	447.9	449.9	434.2	442.6	441.8	448.3
59°	425.7	427.7	413.6	422.5	420.9	426.5
59.5°	403.9	406.3	394.3	403.1	401.5	405.1
60°	383.4	385.8	374.9	385.0	382.2	384.2
60.5°	365.2	365.6	356.4	366.8	364.0	364.4
61°	346.7	346.3	338.6	349.5	345.9	344.7
61.5°	328.1	327.7	322.1	332.6	328.9	326.1
62°	310.0	309.6	306.0	316.9	312.4	308.4
62.5°	291.5	292.7	290.2	301.5	296.7	291.5
63°	275.7	276.5	275.3	286.6	281.4	275.3
63.5°	261.2	260.8	261.2	272.5	267.3	260.4
64°	246.7	246.3	247.9	258.8	253.6	245.9
64.5°	233.4	233.0	235.4	245.9	240.7	232.2
65°	221.3	220.9	223.3	233.4	227.8	220.5
65.5°	210.0	210.0	212.0	222.1	217.3	209.2
66°	199.5	199.9	202.0	211.2	206.4	198.3



TEST NUMBER: P776258

CATALOG NUMBER: HCDJBL3040CSD-HCD41TRMW-4000lm-4000K

**CANDELA DISTRIBUTION (continued):**

	247.5°	270°	292.5°	315°	337.5°	360°
67.5°	175.0	176.6	176.2	183.0	179.4	172.1
68°	168.9	170.1	169.7	175.4	171.7	165.3
68.5°	163.3	164.5	163.7	168.5	165.3	158.8
69°	158.4	159.6	158.4	162.1	159.6	154.4
69.5°	154.4	155.2	154.0	156.8	154.8	151.6
70°	152.0	152.0	150.8	152.8	151.2	148.8
70.5°	149.6	149.6	148.3	150.0	147.9	145.9
71°	146.7	146.7	145.9	147.5	145.1	143.1
71.5°	144.3	144.3	143.5	144.7	142.7	140.7
72°	141.5	141.5	140.7	142.3	139.9	137.9
72.5°	138.7	139.1	137.9	139.5	137.1	135.4
73°	135.9	136.7	135.4	137.1	134.2	132.2
73.5°	133.0	133.8	132.6	134.6	131.0	129.0
74°	130.2	131.0	130.2	131.4	127.8	125.4
74.5°	127.0	128.2	127.0	128.2	124.2	121.7
75°	123.8	125.0	123.8	125.4	120.9	118.5
75.5°	120.5	121.7	120.5	121.7	116.9	114.5
76°	117.3	118.5	117.3	118.5	113.3	110.5
76.5°	113.7	114.9	114.1	114.9	109.2	106.8
77°	110.1	111.7	110.5	111.3	105.2	102.4
77.5°	106.4	108.0	107.2	107.6	101.2	98.0
78°	102.8	104.4	103.6	104.0	96.7	93.5
78.5°	98.8	100.8	99.6	100.0	92.3	89.1
79°	94.7	96.7	95.9	95.9	87.9	84.3
79.5°	90.7	92.7	91.9	91.5	83.0	79.4
80°	86.7	88.7	87.5	87.5	78.2	74.2
80.5°	82.2	84.3	83.4	83.0	73.4	69.3
81°	78.2	80.2	79.4	78.6	68.5	64.5
81.5°	73.8	75.8	75.0	74.2	63.3	58.9
82°	68.9	71.4	70.5	69.3	58.0	53.6
82.5°	64.5	66.9	66.1	64.9	52.8	48.4
83°	60.1	62.1	61.3	60.5	48.0	42.7
83.5°	55.2	57.6	56.8	56.0	42.7	37.1
84°	50.4	52.8	52.4	51.2	37.5	31.4
84.5°	45.6	48.0	47.6	46.8	32.7	25.8
85°	40.7	43.1	42.7	42.7	28.2	20.6
85.5°	35.9	38.3	37.9	38.3	24.6	15.7
86°	30.6	33.5	33.1	33.9	21.4	13.7
86.5°	25.8	28.2	27.8	29.4	18.5	11.7
87°	21.0	23.4	23.0	24.6	15.3	9.7
87.5°	15.7	18.1	17.7	20.2	12.5	7.3
88°	10.9	13.3	12.9	15.3	9.7	5.2
88.5°	6.4	10.1	9.7	11.7	6.9	3.6



TEST NUMBER: P776258

CATALOG NUMBER: HCDJBL3040CSD-HCD41TRMW-4000lm-4000K

**CANDELA DISTRIBUTION (continued):**

	247.5°	270°	292.5°	315°	337.5°	360°
90°	0.0	0.4	0.4	0.4	0.4	0.0



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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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Scaled Data Report





21.5°	2053.1	2063.6	2076.9	2089.8	2099.0	2105.5	2098.2	2095.8	2089.8	2078.5	2063.6
22°	2042.6	2053.9	2067.2	2080.1	2089.4	2096.2	2088.6	2086.6	2080.5	2068.8	2053.5



44°	1257.7	1285.1	1320.6	1352.1	1360.1	1375.0	1348.0	1343.2	1331.5	1321.4	1294.0
44.5°	1227.1	1255.3	1290.4	1321.0	1328.3	1346.0	1318.6	1313.4	1300.1	1290.8	1264.2



66.5°	188.7	190.3	194.7	197.9	195.5	198.7	190.3	191.5	188.3	195.1	194.7
67°	180.2	181.4	185.0	187.0	184.6	187.9	180.2	181.4	177.4	185.0	185.4



89°	2.0	2.4	4.0	4.4	0.8	1.2	0.0	0.4	0.4	1.2	2.4
89.5°	0.4	0.4	0.4	0.4	0.0	0.0	0.0	0.4	0.0	0.4	0.0



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21.5°	2048.3	2041.8	2035.0	2043.4	2046.2	2053.1
22°	2038.2	2031.3	2024.5	2032.9	2035.8	2042.6



44°	1256.1	1239.6	1221.5	1248.9	1247.3	1257.7
44.5°	1227.5	1210.6	1190.8	1217.8	1216.2	1227.1



66.5°	190.7	191.5	192.7	201.2	196.3	188.7
67°	182.2	183.0	183.8	191.9	187.5	180.2

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89°	2.8	6.9	6.4	8.1	4.0	2.0
89.5°	0.0	3.6	3.6	4.4	1.6	0.4

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Scaled Data Report



(END OF REPORT)