

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: P776346

Luminaire Tested: HCDJBL3040CSD-HCD61TRH-HCD61TRLWW-4000lm-3000K

Issue Date: 2/13/2024

**Test Information**

Test Method: LM-79-2019  
Report Number: P776346  
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-3000K  
Description: 6 INCH ROUND SHALLOW-WIDE LENSED WALLWASH KIT  
Light Source: SELECTABLE LUMENS AND CCT ARRAY 90CRI / 3000K CCT  
Ballast/Driver: -

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 4741.1 lumens  
Efficiency: N/A  
Efficacy: 123.1 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

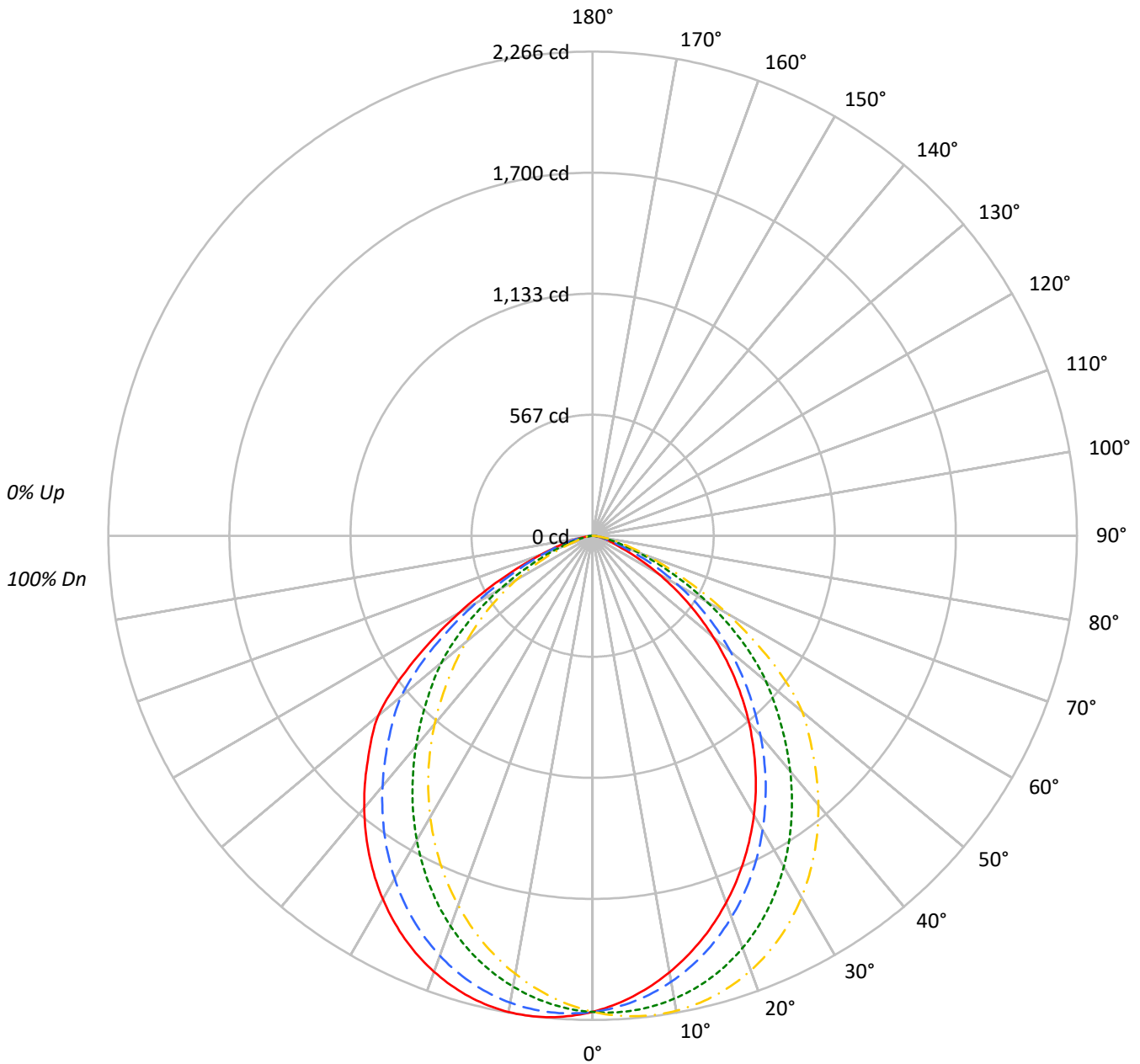
Input Watts (W): 38.5  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 24 FT



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### Luminous Intensity Polar Plot





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

RF	20									20									20									20									
RC	80									50									30									10									0
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	50	30	10	0																
RCR																																					
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100				100															
1	111	107	103	100	108	105	101	99	100	98	95	97	94	93	93	91	90	88				88															
2	102	95	89	84	100	93	88	83	90	85	82	87	83	80	84	81	78	76				76															
3	94	85	78	72	92	83	77	71	81	75	70	78	73	69	75	71	68	66				66															
4	87	76	68	62	85	75	68	62	72	66	61	70	65	60	68	63	60	58				58															
5	80	69	61	55	78	68	60	54	66	59	54	64	58	53	62	57	53	51				51															
6	75	62	54	48	73	61	54	48	60	53	48	58	52	47	57	51	47	45				45															
7	69	57	49	43	68	56	48	43	55	48	43	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	44	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°	122156	122156	122156	122156
5°	119089	122688	124455	121093
10°	115434	122470	125977	119292
15°	111272	121533	126709	116737
20°	106613	119722	126641	113398
25°	101377	116983	125856	109168
30°	95515	113233	124279	104162
35°	88854	108496	121961	98364
40°	81317	102907	118987	91987
45°	72736	96622	115400	85272
50°	62889	90266	111595	78718
55°	51659	80810	97679	68643
60°	39054	67506	79051	55061
65°	25645	51782	59150	40614
70°	17006	36256	40840	27360
75°	13598	23384	28361	17326
80°	10008	14333	17048	10260
85°	5409	8366	3711	5913

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 157.5°  
 Vertical Angle: 45°  
 Luminance: 116190 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	209.9	4.4
10°-20°	590.7	12.5
20°-30°	862.0	18.2
30°-40°	975.6	20.6
40°-50°	923.0	19.5
50°-60°	700.8	14.8
60°-70°	351.1	7.4
70°-80°	111.2	2.3
80°-90°	16.9	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°	1662.5	35.1
0°-40°	2638.1	55.6
0°-60°	4261.9	89.9
0°-90°	4741.1	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4741.1	100.0

**CANDELA DISTRIBUTION:**

	0°	90°	180°	270°	360°	Flux
0°	2228	2228	2228	2228	2228	
5°	2164	2230	2262	2200	2164	204
15°	1961	2141	2233	2057	1961	551
25°	1676	1934	2081	1805	1676	770
35°	1328	1621	1822	1470	1328	828
45°	938	1246	1488	1100	938	722
55°	540	846	1022	718	540	483
65°	198	399	456	313	198	205
75°	64	110	134	82	64	69
85°	9	13	6	9	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°	2228.3	2228.3	2228.3	2228.3	2228.3	2228.3	2228.3	2228.3	2228.3	2228.3	2228.3
0.5°	2222.8	2224.4	2226.0	2227.1	2230.7	2231.0	2231.8	2232.2	2232.6	2232.6	2231.0
1°	2217.4	2220.1	2222.8	2226.4	2231.8	2233.8	2235.7	2236.9	2236.9	2236.1	2233.0
1.5°	2211.9	2215.4	2219.7	2224.8	2232.6	2236.5	2239.7	2241.2	2241.2	2239.3	2235.0
2°	2206.0	2210.3	2216.2	2223.2	2233.0	2238.5	2242.8	2245.1	2244.7	2242.4	2236.1
2.5°	2199.3	2204.8	2212.3	2221.3	2233.0	2240.4	2245.9	2248.7	2248.7	2245.1	2237.7
3°	2193.1	2199.3	2208.0	2218.9	2233.0	2242.0	2249.1	2252.2	2251.4	2247.1	2238.5
3.5°	2186.4	2193.5	2203.7	2216.2	2232.6	2243.6	2251.4	2255.3	2254.5	2249.1	2238.9
4°	2179.0	2187.2	2199.0	2213.4	2231.8	2244.4	2253.8	2258.1	2257.3	2251.0	2239.3
4.5°	2171.9	2180.6	2193.9	2210.3	2231.0	2245.1	2255.7	2260.8	2259.6	2252.2	2239.3
5°	2164.1	2173.9	2188.4	2206.8	2229.5	2245.5	2257.3	2262.8	2261.6	2253.4	2238.9
5.5°	2156.3	2166.5	2182.9	2202.9	2227.9	2245.9	2258.4	2264.7	2263.1	2254.1	2238.5
6°	2148.1	2159.0	2176.6	2199.0	2226.0	2245.5	2259.6	2266.3	2264.3	2254.5	2237.3
6.5°	2139.9	2151.6	2170.8	2194.6	2224.0	2245.1	2260.4	2267.5	2265.5	2254.5	2236.1
7°	2131.2	2143.8	2164.1	2190.0	2221.3	2244.4	2260.8	2268.2	2265.9	2254.5	2234.6
7.5°	2122.2	2135.5	2157.5	2184.9	2218.5	2243.2	2260.8	2268.6	2266.3	2253.8	2232.6
8°	2112.8	2126.9	2150.4	2179.4	2215.4	2242.0	2260.8	2269.0	2266.3	2253.0	2230.7
8.5°	2103.4	2118.3	2143.0	2173.9	2212.3	2240.4	2260.4	2269.0	2265.9	2251.8	2227.9
9°	2094.1	2109.7	2135.2	2168.0	2208.3	2238.9	2259.2	2268.6	2265.5	2250.6	2225.2
9.5°	2083.9	2100.3	2127.3	2162.2	2204.4	2236.5	2258.4	2267.8	2264.3	2248.7	2222.4
10°	2073.7	2090.9	2119.5	2155.5	2200.1	2234.2	2256.9	2266.7	2263.1	2246.7	2218.9
10.5°	2063.5	2081.1	2110.9	2148.9	2195.8	2231.0	2255.3	2265.5	2261.6	2244.0	2215.4
11°	2053.0	2071.4	2101.9	2141.8	2190.7	2227.9	2253.4	2263.9	2259.2	2241.6	2211.5
11.5°	2042.0	2061.2	2092.9	2134.4	2185.6	2224.8	2251.0	2261.6	2257.3	2238.5	2207.2
12°	2031.0	2050.6	2083.9	2126.5	2180.2	2220.9	2248.3	2259.6	2254.5	2235.4	2202.9
12.5°	2019.7	2040.0	2074.1	2119.1	2174.7	2217.0	2245.1	2256.9	2251.8	2231.8	2197.8
13°	2008.3	2029.1	2064.3	2110.5	2168.4	2212.7	2242.0	2253.8	2248.7	2227.9	2192.7
13.5°	1996.6	2018.1	2054.1	2102.3	2162.2	2208.3	2238.5	2250.6	2244.7	2223.6	2187.6
14°	1984.9	2006.8	2044.0	2093.7	2155.5	2203.3	2234.6	2247.1	2241.2	2218.9	2181.7
14.5°	1972.7	1995.4	2033.4	2084.7	2148.5	2198.2	2230.3	2243.2	2236.9	2214.2	2175.9
15°	1960.6	1983.3	2022.4	2074.9	2141.4	2192.3	2226.0	2238.9	2232.6	2209.1	2169.6
15.5°	1948.1	1971.2	2011.1	2065.5	2133.6	2186.8	2221.3	2234.6	2227.9	2203.7	2162.9
16°	1935.5	1959.0	2000.1	2055.3	2125.8	2180.6	2216.2	2229.5	2222.4	2197.8	2155.9
16.5°	1922.6	1946.5	1988.4	2045.5	2117.9	2174.3	2210.7	2224.4	2217.4	2191.9	2148.9
17°	1909.3	1934.0	1976.2	2034.6	2109.7	2167.6	2205.2	2219.3	2211.5	2185.6	2141.4
17.5°	1896.4	1921.1	1964.1	2024.0	2100.7	2160.6	2199.0	2213.4	2205.6	2179.0	2134.0
18°	1882.7	1907.7	1952.0	2013.0	2091.3	2153.6	2192.7	2207.2	2199.0	2171.9	2125.8
18.5°	1869.4	1894.8	1939.1	2001.7	2082.3	2145.7	2186.0	2200.9	2192.7	2164.5	2117.5
19°	1855.3	1881.1	1926.5	1989.9	2072.5	2137.9	2179.0	2194.3	2185.6	2157.1	2108.9
19.5°	1841.2	1867.8	1913.2	1977.8	2062.7	2129.7	2171.9	2187.2	2178.2	2149.6	2099.9
20°	1827.5	1853.7	1900.3	1966.1	2052.2	2121.1	2164.9	2179.8	2170.8	2141.4	2090.9
20.5°	1812.6	1839.6	1886.6	1953.5	2041.6	2112.1	2157.1	2172.3	2162.9	2132.8	2081.1
21°	1798.1	1825.2	1872.9	1941.0	2031.0	2103.4	2148.9	2164.5	2155.1	2124.2	2071.7



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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°	1753.9	1781.3	1830.2	1901.1	1997.0	2074.1	2122.6	2139.5	2129.3	2096.8	2041.2
23°	1738.7	1766.1	1815.8	1887.4	1984.9	2063.9	2113.6	2130.5	2119.9	2087.0	2030.3
23.5°	1723.4	1751.2	1801.3	1873.3	1972.7	2053.3	2104.2	2121.1	2110.5	2076.8	2019.3
24°	1707.7	1735.9	1786.0	1859.2	1960.2	2042.4	2094.1	2111.7	2101.1	2066.3	2007.9
24.5°	1691.7	1720.3	1770.4	1844.3	1947.3	2031.0	2083.9	2101.9	2090.5	2055.7	1996.2
25°	1676.0	1704.2	1755.1	1829.9	1934.0	2020.1	2073.7	2091.7	2080.7	2045.1	1984.5
25.5°	1660.0	1688.6	1739.8	1815.0	1920.7	2007.9	2063.1	2081.5	2069.8	2034.2	1972.3
26°	1643.9	1672.5	1724.2	1799.7	1907.4	1995.8	2052.2	2071.0	2059.2	2022.4	1960.2
26.5°	1627.5	1656.5	1707.3	1784.1	1893.3	1983.7	2040.8	2059.6	2047.9	2011.1	1947.7
27°	1611.1	1640.0	1691.7	1768.8	1878.8	1971.2	2029.1	2048.7	2036.9	1998.9	1934.8
27.5°	1594.2	1623.2	1675.2	1752.7	1864.7	1958.2	2017.7	2037.3	2025.2	1987.2	1921.8
28°	1577.4	1606.4	1658.8	1736.7	1849.8	1944.9	2005.6	2025.6	2013.0	1975.1	1908.1
28.5°	1560.6	1589.5	1641.6	1720.3	1834.9	1931.6	1993.1	2013.4	2000.9	1962.1	1894.8
29°	1543.7	1573.1	1624.8	1704.2	1820.1	1918.3	1980.5	2001.7	1988.4	1949.2	1881.1
29.5°	1526.5	1555.9	1607.9	1687.8	1804.4	1903.8	1968.0	1988.8	1975.8	1936.3	1867.0
30°	1508.9	1538.3	1591.1	1670.9	1788.8	1890.1	1954.7	1976.2	1963.3	1923.0	1852.6
30.5°	1491.3	1521.0	1573.1	1653.7	1773.1	1875.3	1941.0	1963.3	1950.4	1909.3	1838.1
31°	1473.7	1503.4	1555.9	1636.9	1757.0	1860.4	1927.3	1950.4	1937.1	1895.6	1823.6
31.5°	1456.1	1485.8	1537.9	1619.3	1740.6	1845.1	1913.6	1936.7	1923.0	1881.5	1808.3
32°	1438.0	1468.2	1520.2	1601.7	1723.8	1830.6	1899.5	1923.0	1909.7	1867.4	1793.5
32.5°	1420.0	1450.2	1502.2	1584.4	1707.3	1815.0	1885.4	1908.9	1896.0	1852.9	1778.2
33°	1401.6	1431.8	1484.6	1566.8	1690.9	1798.9	1870.6	1894.8	1881.5	1838.5	1762.9
33.5°	1383.6	1413.8	1466.2	1548.4	1673.7	1783.3	1855.7	1880.7	1867.0	1823.6	1747.7
34°	1365.2	1395.8	1448.2	1530.8	1656.5	1767.2	1840.4	1866.3	1852.2	1808.3	1731.2
34.5°	1346.5	1377.4	1429.4	1512.4	1638.5	1750.4	1825.2	1851.0	1837.3	1793.1	1715.2
35°	1327.7	1358.6	1411.4	1494.0	1621.2	1734.0	1809.9	1836.1	1822.4	1777.8	1699.1
35.5°	1309.3	1340.2	1392.3	1476.0	1603.6	1717.5	1793.8	1820.8	1807.5	1762.5	1683.1
36°	1290.5	1321.4	1374.2	1457.6	1585.6	1700.3	1778.2	1805.6	1792.3	1746.5	1666.2
36.5°	1271.7	1302.6	1355.5	1438.8	1567.6	1683.1	1762.1	1789.9	1776.2	1731.2	1649.8
37°	1252.5	1283.4	1335.9	1420.0	1549.2	1665.9	1745.7	1773.9	1760.6	1714.8	1633.0
37.5°	1233.3	1264.7	1317.5	1401.3	1530.8	1648.2	1728.9	1757.8	1744.5	1698.7	1615.7
38°	1213.8	1245.5	1298.7	1382.5	1512.8	1630.6	1712.4	1741.8	1728.5	1681.9	1598.5
38.5°	1195.0	1226.7	1279.5	1363.7	1494.0	1612.6	1695.2	1725.3	1712.4	1665.9	1582.1
39°	1176.2	1207.1	1260.7	1344.5	1475.6	1594.6	1678.4	1708.9	1695.6	1649.0	1564.5
39.5°	1156.2	1188.3	1241.6	1325.7	1457.2	1576.6	1661.2	1692.1	1679.6	1632.2	1547.3
40°	1136.3	1168.8	1222.8	1306.5	1438.0	1558.2	1643.5	1675.2	1662.7	1615.4	1529.2
40.5°	1117.1	1149.2	1202.8	1287.4	1418.5	1540.2	1625.9	1658.0	1645.5	1598.5	1512.0
41°	1097.5	1129.6	1184.0	1268.2	1399.7	1521.0	1607.9	1640.8	1628.7	1580.9	1494.0
41.5°	1077.6	1110.4	1164.5	1248.6	1381.3	1502.6	1590.3	1623.6	1611.8	1564.1	1476.4
42°	1057.6	1090.5	1145.3	1229.8	1361.3	1483.8	1572.3	1606.0	1594.2	1546.5	1458.4
42.5°	1038.0	1071.3	1126.5	1210.6	1342.9	1465.4	1554.3	1588.4	1577.0	1529.2	1440.4
43°	1018.5	1051.7	1106.9	1191.5	1323.4	1446.7	1535.9	1570.7	1559.4	1511.2	1422.4
43.5°	998.5	1032.2	1087.7	1172.3	1304.6	1427.9	1517.9	1553.1	1542.2	1493.6	1404.4



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**CANDELA DISTRIBUTION (continued):**

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
45°	938.2	973.1	1029.8	1114.7	1246.3	1370.7	1461.9	1498.7	1488.5	1440.4	1350.0
45.5°	918.3	953.9	1011.4	1096.0	1228.3	1351.5	1443.5	1480.7	1470.9	1422.4	1332.0
46°	898.3	933.9	991.8	1076.8	1208.3	1332.0	1424.7	1462.7	1452.9	1405.2	1314.4
46.5°	877.5	914.7	973.1	1058.0	1189.1	1313.6	1406.7	1445.1	1436.1	1387.9	1297.1
47°	857.2	894.8	953.9	1039.2	1169.9	1294.8	1388.7	1427.5	1419.3	1371.1	1279.9
47.5°	837.6	875.2	935.1	1020.4	1151.9	1276.4	1371.1	1410.6	1402.0	1353.9	1262.3
48°	817.7	856.0	915.9	1001.6	1132.7	1258.4	1353.1	1393.4	1385.2	1337.1	1245.5
48.5°	797.7	836.4	897.1	983.6	1114.7	1240.4	1335.9	1376.2	1368.0	1319.5	1227.5
49°	777.3	817.3	878.3	965.2	1096.0	1221.6	1317.5	1358.2	1350.0	1300.7	1209.1
49.5°	757.8	798.1	859.9	946.8	1077.2	1203.2	1299.1	1340.2	1330.8	1280.7	1188.7
50°	737.4	778.5	841.5	927.6	1058.4	1184.0	1279.1	1319.1	1308.5	1258.8	1168.4
50.5°	717.5	759.3	822.4	909.6	1039.6	1163.3	1257.2	1296.4	1285.0	1234.1	1145.3
51°	696.7	740.6	804.0	890.5	1019.6	1141.4	1234.5	1271.3	1257.2	1208.3	1122.2
51.5°	677.5	721.4	785.6	871.3	998.9	1119.8	1210.6	1245.1	1230.6	1181.7	1096.7
52°	657.6	702.2	766.8	852.1	978.5	1096.3	1184.8	1216.9	1202.8	1153.9	1070.5
52.5°	638.0	683.4	748.4	832.1	956.6	1072.5	1158.2	1187.9	1173.1	1124.9	1043.5
53°	618.4	664.6	729.6	812.6	934.3	1048.2	1130.4	1158.6	1144.5	1096.0	1016.9
53.5°	598.9	645.8	710.4	792.6	912.8	1023.2	1102.2	1129.2	1113.6	1066.2	989.1
54°	578.9	627.0	691.6	771.9	890.1	997.3	1074.4	1099.9	1082.6	1036.5	961.7
54.5°	559.7	608.3	672.8	752.3	868.5	972.3	1045.5	1069.3	1052.1	1006.7	933.9
55°	540.5	589.9	654.0	732.7	845.5	946.4	1016.9	1039.6	1022.0	977.0	906.5
55.5°	521.0	571.5	634.5	712.4	823.1	920.6	987.1	1009.5	990.7	946.4	877.9
56°	502.6	552.7	615.7	692.0	800.0	893.6	958.2	978.9	959.4	915.5	850.1
56.5°	483.4	533.9	596.9	671.7	777.3	867.0	928.4	948.4	929.2	885.8	822.0
57°	464.6	515.5	577.7	651.3	753.9	840.4	899.9	917.5	898.3	856.4	794.6
57.5°	445.8	497.1	558.5	631.0	731.5	814.1	870.1	887.3	868.2	825.9	766.4
58°	427.8	479.1	540.1	610.6	708.1	787.1	842.3	857.2	838.8	796.1	739.0
58.5°	409.8	460.7	521.0	590.6	685.0	760.9	813.0	827.4	808.7	767.2	712.0
59°	391.4	443.1	502.6	569.9	661.5	734.3	784.0	797.7	778.9	739.0	684.6
59.5°	373.8	425.1	483.8	549.9	639.2	708.1	755.8	768.0	749.6	710.0	657.6
60°	356.2	407.5	465.8	530.4	615.7	682.2	727.6	739.0	721.0	682.2	632.1
60.5°	338.6	389.5	447.4	510.4	593.0	656.0	699.1	710.4	692.8	654.8	605.9
61°	321.3	372.6	429.0	490.4	569.9	631.0	671.7	682.2	664.6	628.6	580.9
61.5°	304.9	355.4	411.4	470.9	548.0	606.3	644.7	654.0	637.2	602.4	556.6
62°	288.1	338.6	394.2	451.7	525.3	582.0	618.8	627.0	610.2	576.9	532.7
62.5°	271.6	321.7	376.1	432.5	503.7	557.4	591.0	599.6	583.6	551.9	508.8
63°	256.0	305.7	358.9	413.3	481.8	532.7	565.2	573.0	558.2	526.8	485.7
63.5°	240.7	289.3	341.7	394.5	460.7	510.0	539.8	547.2	531.5	503.4	463.8
64°	225.5	273.6	324.5	375.8	439.6	486.1	515.9	522.1	505.3	481.4	442.7
64.5°	211.4	258.3	307.7	357.4	419.2	463.4	491.2	497.1	480.3	458.7	421.9
65°	197.7	243.5	291.2	339.4	399.2	441.5	467.3	473.6	456.0	437.2	401.6
65.5°	184.0	228.2	274.8	322.1	380.1	420.0	444.6	450.1	430.9	415.7	382.4
66°	171.4	214.1	258.3	304.1	360.9	398.5	422.7	427.0	407.5	395.3	363.6





TEST NUMBER: P776346

CATALOG NUMBER: HCDJBL3040CSD-HCD61TRH-HCD61TRLWW-4000lm-3000K

**CANDELA DISTRIBUTION (continued):**

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
67.5°	138.6	172.6	212.1	254.4	306.9	340.9	360.5	363.6	344.4	339.4	313.1
68°	131.5	159.7	197.7	239.2	288.9	322.9	342.5	344.8	325.7	321.3	296.3
68.5°	124.1	147.6	183.6	223.5	272.8	304.9	324.5	326.4	306.5	303.3	279.5
69°	117.0	137.8	170.3	209.0	256.8	286.9	306.5	308.0	287.3	285.7	264.6
69.5°	109.6	128.4	157.3	194.1	241.1	269.7	288.1	289.6	270.5	269.7	249.7
70°	106.1	119.0	145.6	181.2	226.2	254.0	272.0	274.0	254.8	254.4	235.6
70.5°	102.2	109.2	136.2	168.3	212.1	239.2	257.2	258.7	239.9	240.3	222.7
71°	97.9	99.8	126.8	155.8	198.8	224.7	242.3	243.8	225.8	226.2	209.8
71.5°	93.5	95.5	117.0	144.4	185.5	210.6	227.8	229.4	212.1	212.9	197.3
72°	88.9	91.6	107.6	135.0	173.0	198.1	214.5	216.5	199.2	200.0	185.5
72.5°	84.5	87.7	98.2	125.6	160.9	185.1	202.0	203.5	187.1	188.3	174.2
73°	80.2	83.4	90.8	116.2	149.9	173.4	189.8	191.8	175.4	176.1	163.2
73.5°	75.9	79.5	84.2	106.5	139.3	162.0	177.7	180.0	164.8	165.6	153.0
74°	72.0	75.5	78.3	97.1	129.2	151.5	167.1	169.1	153.8	155.0	143.3
74.5°	67.7	71.6	73.2	89.6	119.4	140.9	156.6	158.5	143.6	144.8	133.9
75°	64.2	67.7	68.5	82.6	110.4	131.1	146.8	148.3	133.9	135.4	124.5
75.5°	60.3	64.2	64.6	75.9	102.2	122.1	137.0	139.0	124.5	126.0	115.9
76°	56.8	60.3	60.7	70.1	93.9	113.1	127.6	129.6	115.1	117.0	107.6
76.5°	53.2	56.8	57.5	64.2	86.5	104.9	119.0	120.6	106.5	108.8	99.8
77°	49.7	53.2	54.0	59.1	79.5	97.1	110.4	112.3	97.9	100.6	92.4
77.5°	46.6	50.1	50.9	54.4	72.8	89.6	102.6	104.1	90.0	92.8	85.3
78°	43.1	46.6	47.8	50.1	66.5	82.6	94.7	96.3	82.2	85.3	78.3
78.5°	40.3	43.4	44.6	45.8	60.7	75.5	87.3	88.9	74.4	78.7	71.6
79°	37.2	40.3	41.9	41.9	55.2	69.3	80.2	81.4	67.3	71.6	65.4
79.5°	34.4	37.2	39.1	38.4	50.1	63.0	73.6	74.8	60.7	65.4	59.5
80°	31.7	34.4	36.4	35.2	45.4	57.1	66.9	68.1	54.0	59.1	53.6
80.5°	29.0	31.7	33.7	32.1	41.1	51.7	60.7	61.8	47.4	53.2	48.1
81°	26.2	29.0	30.9	29.4	37.2	46.6	54.8	56.0	41.9	47.8	43.1
81.5°	23.9	26.6	28.6	27.0	33.7	41.9	48.9	50.1	36.8	42.7	38.7
82°	21.5	23.9	26.2	24.7	30.1	37.6	43.4	45.0	31.3	38.4	34.4
82.5°	19.2	21.5	23.9	22.3	26.6	33.7	39.1	40.3	25.8	34.1	30.1
83°	16.8	19.2	21.5	20.4	23.1	29.7	34.8	36.0	20.7	29.7	25.8
83.5°	14.5	16.8	19.2	18.4	20.4	25.8	30.5	31.7	16.4	25.1	21.5
84°	12.5	14.5	17.2	16.4	17.6	21.9	25.8	27.0	12.1	20.7	18.4
84.5°	10.6	12.5	15.3	14.5	15.3	18.8	21.5	22.7	8.6	17.2	15.3
85°	8.6	10.6	13.3	12.9	13.3	15.7	18.0	18.4	5.9	14.1	12.5
85.5°	6.7	8.6	11.7	11.4	11.4	13.3	14.9	14.9	3.9	11.0	9.8
86°	5.1	7.0	9.8	9.8	9.4	10.6	12.1	11.4	2.7	8.2	7.4
86.5°	4.3	5.5	7.8	7.8	7.8	8.6	9.4	8.6	2.3	5.9	5.5
87°	3.1	4.3	6.3	6.3	6.3	6.7	7.0	6.3	1.6	3.9	3.9
87.5°	2.3	3.1	4.7	4.7	5.1	5.1	5.1	4.3	1.2	2.3	2.3
88°	1.6	2.3	3.1	3.5	3.9	3.5	3.1	2.3	0.8	1.2	1.2
88.5°	0.8	1.2	2.0	2.0	2.3	2.0	1.6	1.2	0.4	0.4	0.4



TEST NUMBER: P776346

CATALOG NUMBER: HCDJBL3040CSD-HCD61TRH-HCD61TRLWW-4000lm-3000K

**CANDELA DISTRIBUTION (continued):**

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



TEST NUMBER: P776346

CATALOG NUMBER: HCDJBL3040CSD-HCD61TRH-HCD61TRLWW-4000lm-3000K

**CANDELA DISTRIBUTION (continued):**

	247.5°	270°	292.5°	315°	337.5°	360°
0°	2228.3	2228.3	2228.3	2228.3	2228.3	2228.3
0.5°	2228.7	2227.9	2224.8	2222.8	2222.0	2222.8
1°	2229.1	2226.0	2220.9	2218.1	2216.6	2217.4
1.5°	2228.7	2223.6	2217.4	2212.7	2210.7	2211.9
2°	2228.7	2221.3	2213.0	2207.2	2204.4	2206.0
2.5°	2227.9	2218.5	2208.3	2201.7	2198.2	2199.3
3°	2227.1	2215.4	2203.7	2195.4	2191.5	2193.1
3.5°	2226.0	2211.9	2198.6	2189.2	2184.9	2186.4
4°	2224.4	2208.3	2193.5	2182.5	2177.8	2179.0
4.5°	2222.4	2204.4	2188.0	2175.5	2170.0	2171.9
5°	2220.5	2200.5	2182.1	2168.4	2162.2	2164.1
5.5°	2218.1	2195.8	2175.9	2161.0	2154.3	2156.3
6°	2215.4	2191.1	2169.2	2153.2	2146.1	2148.1
6.5°	2212.3	2186.0	2162.6	2145.3	2137.5	2139.9
7°	2209.1	2180.9	2155.9	2137.1	2128.5	2131.2
7.5°	2205.2	2175.1	2148.5	2128.5	2119.5	2122.2
8°	2201.7	2169.2	2141.0	2119.9	2110.5	2112.8
8.5°	2197.4	2163.3	2132.8	2110.9	2100.7	2103.4
9°	2193.1	2156.7	2125.0	2101.9	2090.9	2094.1
9.5°	2188.4	2149.6	2116.4	2092.1	2080.7	2083.9
10°	2183.3	2143.0	2107.8	2082.3	2070.6	2073.7
10.5°	2177.8	2135.5	2098.8	2072.5	2060.4	2063.5
11°	2172.3	2128.1	2089.8	2062.4	2049.8	2053.0
11.5°	2166.5	2119.9	2080.4	2051.8	2038.9	2042.0
12°	2160.6	2111.7	2070.6	2041.2	2027.5	2031.0
12.5°	2153.9	2103.4	2060.4	2029.9	2016.2	2019.7
13°	2147.3	2094.8	2050.2	2018.9	2004.8	2008.3
13.5°	2140.2	2085.4	2040.0	2007.6	1992.7	1996.6
14°	2132.8	2076.4	2029.1	1996.2	1980.9	1984.9
14.5°	2125.4	2066.7	2018.1	1984.5	1968.8	1972.7
15°	2117.1	2056.9	2007.2	1972.3	1956.3	1960.6
15.5°	2108.9	2047.1	1995.4	1959.8	1943.8	1948.1
16°	2100.7	2036.5	1983.7	1947.3	1931.2	1935.5
16.5°	2092.1	2025.9	1971.5	1934.8	1917.9	1922.6
17°	2083.1	2015.0	1959.4	1921.8	1905.0	1909.3
17.5°	2073.7	2004.0	1946.9	1908.5	1891.3	1896.4
18°	2063.9	1992.3	1934.4	1895.2	1878.0	1882.7
18.5°	2054.1	1980.5	1921.1	1881.5	1864.3	1869.4
19°	2044.0	1968.4	1908.1	1867.8	1850.2	1855.3
19.5°	2033.4	1956.3	1894.8	1853.7	1836.1	1841.2
20°	2022.8	1943.8	1881.1	1840.0	1822.0	1827.5
20.5°	2011.9	1931.2	1867.0	1825.5	1807.5	1812.6
21°	2000.5	1917.9	1852.9	1810.7	1792.7	1798.1

TEST NUMBER: P776346

CATALOG NUMBER: HCDJBL3040CSD-HCD61TRH-HCD61TRLWW-4000lm-3000K

**CANDELA DISTRIBUTION (continued):**

	247.5°	270°	292.5°	315°	337.5°	360°
22.5°	1965.3	1877.6	1809.1	1766.1	1748.0	1753.9
23°	1952.8	1863.1	1794.2	1750.8	1732.8	1738.7
23.5°	1940.6	1849.4	1779.4	1735.5	1717.5	1723.4
24°	1927.7	1834.5	1763.7	1719.9	1701.5	1707.7
24.5°	1914.4	1820.1	1748.4	1704.2	1685.4	1691.7
25°	1901.1	1804.8	1732.4	1688.2	1669.8	1676.0
25.5°	1887.4	1789.9	1716.7	1671.7	1653.7	1660.0
26°	1873.7	1775.1	1700.3	1655.3	1637.3	1643.9
26.5°	1859.2	1759.0	1684.6	1639.2	1620.8	1627.5
27°	1845.1	1743.0	1667.8	1622.8	1604.4	1611.1
27.5°	1831.0	1727.3	1651.4	1606.0	1587.6	1594.2
28°	1816.2	1711.3	1634.1	1588.7	1570.3	1577.4
28.5°	1801.7	1695.2	1617.7	1571.9	1553.9	1560.6
29°	1786.0	1678.4	1600.5	1554.7	1536.3	1543.7
29.5°	1770.7	1661.9	1583.3	1537.5	1519.1	1526.5
30°	1755.1	1645.5	1566.0	1519.9	1501.5	1508.9
30.5°	1739.8	1628.3	1548.4	1502.2	1484.2	1491.3
31°	1723.8	1611.1	1530.4	1484.6	1466.2	1473.7
31.5°	1707.3	1593.8	1513.2	1466.6	1448.6	1456.1
32°	1690.9	1576.2	1495.2	1448.6	1430.2	1438.0
32.5°	1674.9	1559.0	1477.2	1430.6	1412.6	1420.0
33°	1658.0	1541.8	1459.2	1412.6	1394.2	1401.6
33.5°	1641.2	1523.8	1441.2	1394.2	1376.2	1383.6
34°	1624.4	1505.8	1422.8	1375.8	1357.8	1365.2
34.5°	1607.1	1487.8	1404.0	1357.4	1339.4	1346.5
35°	1589.9	1469.8	1385.6	1338.6	1320.2	1327.7
35.5°	1572.7	1451.4	1367.6	1319.8	1302.2	1309.3
36°	1555.5	1433.7	1348.8	1301.4	1283.4	1290.5
36.5°	1537.9	1415.0	1330.4	1282.7	1264.3	1271.7
37°	1519.9	1396.6	1311.2	1263.5	1245.5	1252.5
37.5°	1502.2	1378.6	1292.8	1244.7	1226.7	1233.3
38°	1484.2	1359.8	1273.7	1225.5	1207.5	1213.8
38.5°	1466.2	1341.0	1255.3	1206.7	1188.3	1195.0
39°	1448.2	1323.0	1236.5	1187.9	1169.1	1176.2
39.5°	1430.2	1304.2	1217.7	1168.8	1150.0	1156.2
40°	1411.8	1285.4	1198.5	1149.2	1130.4	1136.3
40.5°	1393.8	1267.0	1179.7	1130.4	1111.2	1117.1
41°	1375.4	1247.8	1160.9	1111.2	1091.3	1097.5
41.5°	1357.0	1229.4	1141.7	1092.0	1071.7	1077.6
42°	1338.6	1211.0	1123.0	1072.9	1052.5	1057.6
42.5°	1320.2	1192.6	1104.6	1053.7	1032.9	1038.0
43°	1302.2	1174.2	1085.8	1034.5	1013.4	1018.5
43.5°	1283.4	1155.1	1067.4	1015.3	993.8	998.5



TEST NUMBER: P776346

CATALOG NUMBER: HCDJBL3040CSD-HCD61TRH-HCD61TRLWW-4000lm-3000K

**CANDELA DISTRIBUTION (continued):**

	247.5°	270°	292.5°	315°	337.5°	360°
45°	1228.6	1099.9	1011.0	958.2	935.1	938.2
45.5°	1210.2	1081.5	992.6	939.0	915.1	918.3
46°	1192.2	1063.9	974.6	920.6	895.6	898.3
46.5°	1174.6	1046.2	956.6	901.4	876.0	877.5
47°	1157.0	1028.6	938.2	882.6	856.4	857.2
47.5°	1139.4	1010.6	920.2	863.8	837.2	837.6
48°	1122.6	994.2	902.6	845.1	817.7	817.7
48.5°	1105.3	976.6	884.6	826.7	797.7	797.7
49°	1087.3	959.0	867.4	808.7	778.5	777.3
49.5°	1068.2	941.3	850.1	790.3	759.3	757.8
50°	1048.6	923.0	832.5	771.9	739.8	737.4
50.5°	1027.8	903.8	814.1	753.9	721.0	717.5
51°	1006.7	884.6	796.5	735.9	701.4	696.7
51.5°	984.8	864.6	778.5	717.9	682.6	677.5
52°	962.5	844.7	760.1	700.2	663.8	657.6
52.5°	939.0	823.9	741.3	681.8	644.7	638.0
53°	915.9	803.2	722.5	663.8	626.3	618.4
53.5°	891.2	782.0	703.8	645.4	607.5	598.9
54°	866.6	760.9	684.6	627.8	589.1	578.9
54.5°	841.9	739.8	665.4	609.4	570.7	559.7
55°	817.7	718.2	645.8	591.0	552.7	540.5
55.5°	792.2	695.9	626.7	572.6	533.9	521.0
56°	767.2	674.4	607.1	554.6	515.9	502.6
56.5°	742.5	652.9	587.9	536.2	497.9	483.4
57°	717.9	631.0	567.9	518.2	479.9	464.6
57.5°	692.8	609.0	548.4	499.4	461.9	445.8
58°	668.5	587.5	529.2	481.8	444.6	427.8
58.5°	644.7	566.0	510.0	463.4	426.6	409.8
59°	620.0	544.5	490.8	445.4	409.0	391.4
59.5°	596.5	522.9	471.7	427.8	391.8	373.8
60°	573.0	502.2	452.9	410.2	374.6	356.2
60.5°	549.9	481.4	434.1	392.6	357.4	338.6
61°	526.8	461.1	415.7	375.4	340.5	321.3
61.5°	504.5	441.5	397.3	358.5	324.1	304.9
62°	483.4	421.9	379.3	341.7	308.0	288.1
62.5°	461.5	402.8	361.7	324.9	292.0	271.6
63°	440.3	383.6	344.4	308.4	276.3	256.0
63.5°	419.6	365.6	327.2	292.4	260.7	240.7
64°	399.6	347.6	310.4	276.3	245.8	225.5
64.5°	380.5	330.4	294.0	260.7	230.9	211.4
65°	361.7	313.1	277.9	245.4	217.2	197.7
65.5°	344.1	296.7	262.2	230.2	203.1	184.0
66°	326.8	280.3	246.6	215.7	189.8	171.4



TEST NUMBER: P776346

CATALOG NUMBER: HCDJBL3040CSD-HCD61TRH-HCD61TRLWW-4000lm-3000K

**CANDELA DISTRIBUTION (continued):**

	247.5°	270°	292.5°	315°	337.5°	360°
67.5°	276.7	235.2	203.5	174.2	152.3	138.6
68°	261.5	221.1	189.8	162.0	141.3	131.5
68.5°	247.0	207.8	177.3	149.9	132.7	124.1
69°	232.9	194.9	164.4	138.2	124.5	117.0
69.5°	219.6	182.8	152.7	129.2	116.2	109.6
70°	206.7	170.7	142.1	120.2	107.6	106.1
70.5°	194.5	159.3	133.1	111.2	99.4	102.2
71°	182.4	148.7	124.1	102.2	95.5	97.9
71.5°	171.4	138.2	115.1	95.1	92.0	93.5
72°	160.5	129.6	106.1	88.9	88.1	88.9
72.5°	150.3	120.9	97.1	83.0	83.8	84.5
73°	140.1	112.3	89.6	77.5	79.5	80.2
73.5°	130.7	103.3	83.0	72.8	75.5	75.9
74°	121.7	95.9	76.7	68.9	71.6	72.0
74.5°	113.5	88.5	70.8	65.4	67.7	67.7
75°	105.3	81.8	65.8	62.2	64.2	64.2
75.5°	97.5	75.2	60.7	58.7	60.3	60.3
76°	90.0	69.3	56.4	55.6	56.8	56.8
76.5°	83.4	63.4	52.1	52.4	53.2	53.2
77°	76.7	57.9	48.1	49.3	50.1	49.7
77.5°	70.5	53.2	44.6	46.2	47.0	46.6
78°	64.2	48.1	41.1	43.4	43.8	43.1
78.5°	58.7	43.8	38.0	40.7	40.7	40.3
79°	53.2	39.9	35.2	38.0	37.6	37.2
79.5°	48.5	36.0	32.5	35.2	34.8	34.4
80°	43.8	32.5	30.1	32.5	32.1	31.7
80.5°	39.1	29.4	28.2	30.1	29.4	29.0
81°	35.6	26.2	25.8	27.8	26.6	26.2
81.5°	32.1	23.5	23.9	25.4	24.3	23.9
82°	28.2	21.1	21.5	23.1	21.5	21.5
82.5°	24.7	18.8	19.6	20.7	19.2	19.2
83°	20.7	16.4	17.6	18.8	16.8	16.8
83.5°	18.0	14.5	15.7	16.8	14.5	14.5
84°	15.3	12.5	14.1	14.9	12.9	12.5
84.5°	12.9	11.0	12.1	12.9	11.0	10.6
85°	10.6	9.4	10.6	11.0	9.0	8.6
85.5°	8.6	7.4	8.6	9.4	7.0	6.7
86°	6.7	6.3	7.0	7.4	5.9	5.1
86.5°	5.1	4.7	5.5	5.9	4.7	4.3
87°	3.5	3.5	3.9	4.3	3.5	3.1
87.5°	2.3	2.0	2.3	2.7	2.3	2.3
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: P776346

CATALOG NUMBER: HCDJBL3040CSD-HCD61TRH-HCD61TRLWW-4000lm-3000K

**CANDELA DISTRIBUTION (continued):**

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



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Scaled Data Report





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

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Scaled Data Report



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Scaled Data Report





21.5°	1783.7	1810.7	1858.8	1927.7	2019.7	2093.7	2140.2	2156.7	2146.9	2115.6	2061.6
22°	1768.8	1796.2	1844.7	1914.4	2008.7	2083.9	2132.0	2148.1	2137.9	2105.8	2051.4



44°	977.7	1012.2	1068.6	1153.1	1285.0	1408.3	1499.1	1534.7	1524.2	1476.0	1386.4
44.5°	958.2	992.6	1049.4	1134.3	1265.8	1389.5	1480.7	1516.7	1506.5	1458.4	1368.4



66.5°	159.3	200.0	242.7	287.3	342.9	378.1	401.2	405.1	384.8	375.0	346.8
67°	148.0	186.3	227.4	270.5	324.9	358.9	380.8	384.0	363.6	357.0	330.0



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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21.5°	1989.2	1904.6	1838.9	1795.8	1777.8	1783.7
22°	1977.0	1891.3	1824.0	1781.3	1762.9	1768.8



44°	1265.0	1136.7	1048.2	996.1	973.8	977.7
44.5°	1246.3	1118.3	1029.8	977.0	954.7	958.2

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66.5°	309.2	265.0	231.7	200.8	176.9	159.3
67°	292.0	249.3	217.2	187.9	164.4	148.0

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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

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Peachtree City, GA 30269

Scaled Data Report



(END OF REPORT)