

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: P776455

Luminaire Tested: HCDJBL3040CSD-HCD81TRMW-4000lm-2700K

Issue Date: 2/13/2024

**Test Information**

Test Method: LM-79-2019  
Report Number: P776455  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA ( A2312156B044)  
Test Lab:  
Issue Date: 2/13/2024  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: HALO COMMERCIAL  
Catalog Number: HCDJBS3040CSD-HCD81TRMW-4000lm-2700K  
Description: 8 INCH ROUND SHALLOW-WIDE MATTE WHITE TRIM  
Light Source: SELECTABLE LUMENS AND CCT ARRAY 90CRI / 2700K CCT  
Ballast/Driver: -

**Summary**

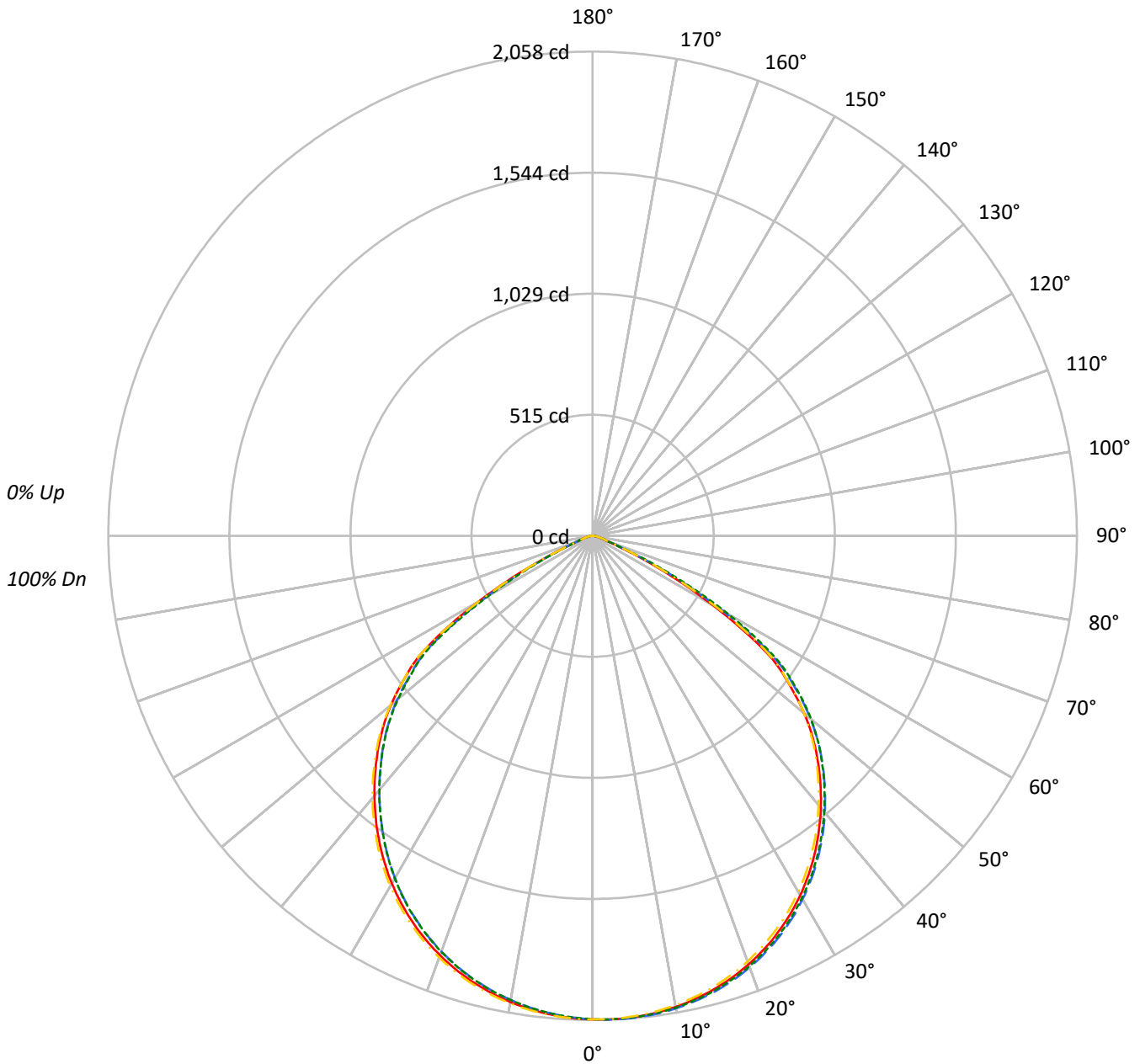
Lumens per Lamp: N/A  
Luminaire Lumens: 4737.8 lumens  
Efficiency: N/A  
Efficacy: 123.1 lumens/watt  
Spacing Criteria (0/90/45): 1.25 / 1.25 / 1.35  
Luminous Opening: Circular (Dia: 0.67' x H: 0')  
CIE Type: Direct

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					20	
RC	80					70					50					30					10	0
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	50	30	10	0	
RCR																						
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100				
1	111	107	104	101	109	105	102	99	101	98	96	97	95	93	94	92	91	89				
2	103	96	90	85	100	94	89	84	91	86	83	87	84	81	85	82	79	77				
3	95	86	79	73	92	84	78	72	81	76	71	79	74	70	76	72	69	67				
4	87	77	69	63	85	75	68	63	73	67	62	71	65	61	69	64	60	58				
5	81	69	61	55	79	68	60	55	66	59	54	64	58	54	62	57	53	51				
6	75	62	54	48	73	62	54	48	60	53	48	58	52	47	57	51	47	45				
7	69	57	49	43	68	56	48	43	55	48	43	53	47	42	52	46	42	40				
8	65	52	44	39	63	51	44	38	50	43	38	49	43	38	48	42	38	36				
9	60	48	40	35	59	47	40	35	46	39	35	45	39	34	44	38	34	32				
10	57	44	37	32	55	44	36	32	43	36	31	42	36	31	41	35	31	29				

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

	0°	90°	180°	270°
0°	62767	62767	62767	62767
5°	62936	62961	62618	62455
10°	63035	63140	62390	62130
15°	63066	63246	62070	61707
20°	62978	63254	61646	61133
25°	62701	63088	61006	60332
30°	62194	62695	60149	59257
35°	61359	62018	58984	57840
40°	60120	61009	57490	56175
45°	58439	59631	55719	54229
50°	55714	57537	53144	51230
55°	50875	53345	48485	46441
60°	35977	40501	34267	31361
65°	17663	21130	15944	14390
70°	5624	6204	5650	5552
75°	4070	4577	4117	4211
80°	2831	3376	2831	3042
85°	1611	2277	1611	1892

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 67.5°  
 Vertical Angle: 45°  
 Luminance: 59765 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	194.6	4.1
10°-20°	558.3	11.8
20°-30°	844.9	17.8
30°-40°	1007.2	21.3
40°-50°	1016.5	21.5
50°-60°	807.4	17.0
60°-70°	261.8	5.5
70°-80°	40.2	0.8
80°-90°	7.0	0.1
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°	1597.8	33.7
0°-40°	2605.0	55.0
0°-60°	4428.8	93.5
0°-90°	4737.8	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4737.8	100.0

**CANDELA DISTRIBUTION:**

	0°	90°	180°	270°	360°	Flux
0°	2056	2056	2056	2056	2056	
5°	2054	2054	2043	2038	2054	195
15°	1995	2001	1964	1952	1995	563
25°	1861	1873	1811	1791	1861	858
35°	1646	1664	1583	1552	1646	1029
45°	1354	1381	1290	1256	1354	1041
55°	956	1002	911	872	956	825
65°	244	292	221	199	244	264
75°	34	39	35	36	34	38
85°	5	6	5	5	5	6
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°	2055.9	2055.9	2055.9	2055.9	2055.9	2055.9	2055.9	2055.9	2055.9	2055.9	2055.9
0.5°	2057.1	2056.7	2056.7	2057.1	2055.1	2055.5	2056.3	2056.3	2055.9	2055.1	2054.7
1°	2057.1	2057.1	2057.4	2057.8	2055.9	2055.9	2055.9	2055.9	2055.1	2054.0	2053.6
1.5°	2057.4	2057.4	2057.8	2058.2	2056.3	2055.9	2055.9	2055.5	2054.0	2052.8	2052.1
2°	2057.1	2057.4	2058.2	2058.6	2056.7	2055.9	2055.5	2054.7	2053.2	2051.3	2050.5
2.5°	2056.7	2057.4	2058.2	2058.6	2056.7	2055.9	2054.7	2053.6	2051.7	2050.1	2049.0
3°	2056.7	2057.4	2058.2	2058.6	2056.3	2055.5	2054.4	2052.4	2050.5	2048.2	2047.5
3.5°	2055.9	2057.1	2057.8	2058.6	2056.3	2054.7	2053.2	2051.3	2049.0	2046.3	2045.2
4°	2055.5	2056.7	2057.4	2057.8	2055.9	2054.4	2052.1	2049.8	2047.1	2044.4	2043.2
4.5°	2054.4	2055.9	2057.1	2057.4	2055.1	2053.2	2050.9	2048.2	2045.2	2042.1	2040.5
5°	2053.6	2055.1	2056.7	2056.7	2054.4	2052.4	2049.4	2046.3	2043.2	2039.8	2038.2
5.5°	2052.4	2054.0	2055.5	2055.9	2053.2	2051.3	2047.8	2044.4	2040.5	2037.1	2035.6
6°	2050.9	2052.8	2054.4	2054.7	2052.1	2049.8	2045.9	2042.5	2038.2	2034.4	2032.9
6.5°	2049.4	2051.7	2053.2	2053.6	2050.9	2048.2	2044.0	2040.2	2035.6	2031.3	2029.8
7°	2047.5	2050.1	2052.1	2052.1	2049.4	2046.3	2042.1	2037.9	2032.9	2028.3	2026.3
7.5°	2045.5	2048.2	2050.5	2050.5	2047.8	2044.4	2040.2	2034.8	2029.8	2025.2	2023.3
8°	2043.6	2046.3	2048.6	2049.0	2045.9	2042.5	2037.5	2032.1	2026.7	2021.7	2019.4
8.5°	2040.9	2044.4	2046.7	2046.7	2044.0	2039.8	2034.8	2029.0	2023.3	2018.3	2016.0
9°	2038.6	2042.5	2044.8	2044.8	2041.7	2037.5	2031.7	2026.0	2019.8	2014.4	2012.1
9.5°	2035.9	2039.8	2042.5	2042.5	2039.4	2035.2	2029.0	2022.5	2016.4	2010.6	2007.9
10°	2033.3	2037.5	2039.8	2039.8	2036.7	2032.1	2026.0	2019.0	2012.5	2006.4	2003.7
10.5°	2030.2	2034.8	2037.1	2037.1	2034.0	2029.0	2022.9	2015.2	2008.3	2002.2	1999.1
11°	2027.1	2031.7	2034.4	2034.4	2030.9	2026.0	2019.0	2011.4	2004.1	1997.6	1994.5
11.5°	2023.7	2028.6	2031.3	2031.3	2027.9	2022.5	2015.2	2007.5	1999.9	1992.9	1989.9
12°	2020.2	2025.6	2028.3	2028.3	2024.4	2019.0	2011.4	2002.9	1995.3	1988.3	1984.9
12.5°	2016.7	2022.1	2024.8	2024.8	2021.4	2015.2	2007.5	1998.7	1990.3	1983.0	1979.5
13°	2012.5	2018.3	2021.4	2021.0	2017.5	2011.4	2003.3	1994.1	1985.3	1978.0	1974.5
13.5°	2008.3	2014.1	2017.5	2017.1	2013.7	2007.1	1999.1	1989.1	1980.3	1972.6	1968.8
14°	2004.1	2010.2	2013.7	2013.3	2009.5	2002.9	1994.5	1984.5	1974.9	1967.2	1963.0
14.5°	1999.9	2006.0	2009.8	2009.1	2005.6	1998.3	1989.5	1979.1	1969.5	1961.5	1957.2
15°	1995.3	2002.2	2005.6	2004.8	2001.0	1994.1	1984.5	1973.8	1963.8	1955.3	1951.5
15.5°	1990.3	1997.2	2001.0	2000.2	1996.4	1989.1	1979.5	1968.8	1958.0	1949.6	1945.0
16°	1985.3	1992.6	1996.4	1995.3	1991.4	1984.1	1974.1	1962.6	1951.9	1943.0	1938.4
16.5°	1980.3	1987.6	1991.4	1990.3	1986.8	1979.1	1968.8	1956.9	1945.7	1936.9	1931.9
17°	1974.5	1982.6	1986.4	1985.3	1981.8	1973.8	1963.0	1950.7	1939.6	1930.4	1925.0
17.5°	1969.1	1977.2	1981.4	1979.9	1976.4	1968.4	1956.9	1944.6	1932.7	1923.1	1918.1
18°	1963.4	1971.5	1975.7	1974.5	1971.1	1962.6	1951.1	1938.1	1926.2	1916.2	1910.8
18.5°	1957.6	1966.1	1970.3	1968.4	1965.3	1956.5	1945.0	1931.5	1919.2	1908.9	1903.5
19°	1951.1	1960.3	1964.2	1963.0	1959.2	1950.3	1938.4	1924.6	1912.0	1901.2	1895.8
19.5°	1945.0	1954.2	1958.4	1956.9	1953.0	1944.2	1931.9	1917.7	1904.7	1893.9	1888.2
20°	1938.4	1947.7	1952.3	1950.7	1946.9	1937.7	1925.0	1910.8	1897.4	1886.2	1880.1
20.5°	1931.9	1941.1	1945.7	1944.2	1940.4	1931.1	1918.1	1903.1	1889.3	1878.2	1872.0
21°	1924.6	1934.6	1938.8	1937.7	1933.5	1924.2	1910.4	1895.4	1881.6	1869.7	1863.6



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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°	1902.7	1913.1	1918.1	1916.2	1912.3	1902.4	1887.8	1872.0	1856.7	1844.0	1837.5
23°	1894.7	1905.8	1910.4	1908.9	1905.0	1894.7	1880.1	1863.2	1847.9	1835.6	1828.3
23.5°	1887.0	1898.1	1903.1	1901.2	1897.0	1887.0	1871.7	1855.1	1839.0	1826.0	1819.1
24°	1878.6	1890.1	1895.1	1893.5	1889.3	1878.9	1863.2	1846.3	1830.2	1817.1	1809.5
24.5°	1870.1	1882.0	1887.0	1885.1	1881.2	1870.5	1854.8	1837.5	1820.6	1807.2	1799.5
25°	1861.3	1873.6	1878.6	1876.6	1872.8	1861.7	1846.3	1828.3	1811.0	1797.6	1789.5
25.5°	1852.8	1865.1	1870.1	1868.2	1864.4	1853.2	1837.5	1818.7	1801.8	1788.0	1779.5
26°	1844.0	1856.3	1861.3	1859.8	1855.5	1844.4	1828.3	1809.5	1791.8	1777.6	1769.5
26.5°	1834.8	1847.5	1852.8	1850.9	1846.3	1835.6	1818.7	1799.9	1781.8	1767.2	1758.8
27°	1825.2	1838.3	1843.2	1841.7	1837.1	1826.4	1809.5	1789.9	1771.5	1756.9	1748.1
27.5°	1815.6	1828.7	1834.4	1832.1	1828.3	1816.8	1799.5	1779.9	1761.1	1746.1	1737.3
28°	1805.6	1819.1	1824.8	1822.5	1818.7	1807.2	1789.5	1769.2	1750.4	1735.4	1726.6
28.5°	1795.6	1809.1	1814.8	1812.9	1808.7	1797.2	1779.5	1758.8	1739.6	1723.9	1715.0
29°	1785.7	1799.5	1804.9	1802.9	1798.7	1786.8	1768.8	1748.1	1728.9	1713.1	1703.5
29.5°	1774.9	1789.5	1794.9	1793.0	1788.7	1776.8	1758.4	1737.3	1717.3	1701.2	1692.0
30°	1764.2	1778.8	1784.1	1782.6	1778.4	1766.1	1747.7	1726.2	1706.2	1689.7	1680.1
30.5°	1753.8	1768.0	1773.8	1771.8	1768.0	1755.7	1736.9	1715.0	1694.3	1677.8	1667.8
31°	1742.3	1757.3	1763.0	1761.1	1756.9	1744.6	1725.4	1703.5	1682.8	1665.9	1655.9
31.5°	1731.2	1746.1	1751.9	1750.0	1746.1	1733.5	1714.3	1691.6	1670.9	1653.6	1643.6
32°	1719.6	1734.6	1740.8	1738.8	1735.0	1722.3	1702.8	1680.1	1658.6	1641.3	1631.4
32.5°	1707.7	1723.1	1729.6	1727.3	1723.5	1710.8	1690.9	1667.8	1646.3	1628.7	1617.9
33°	1696.2	1711.6	1718.1	1715.8	1712.4	1699.3	1679.0	1655.9	1633.7	1616.0	1605.6
33.5°	1683.9	1699.7	1706.2	1704.3	1700.5	1687.4	1666.7	1643.3	1621.4	1602.6	1592.2
34°	1671.3	1687.4	1694.3	1692.0	1688.2	1675.5	1654.8	1630.6	1608.3	1589.5	1579.2
34.5°	1659.0	1675.1	1682.0	1679.7	1675.9	1662.8	1642.1	1617.9	1595.3	1576.5	1565.3
35°	1646.3	1662.5	1669.7	1667.4	1664.0	1650.6	1629.4	1605.3	1582.6	1563.0	1552.3
35.5°	1633.3	1649.8	1657.1	1654.8	1651.3	1637.9	1616.4	1591.8	1569.2	1549.2	1538.5
36°	1620.2	1637.1	1644.0	1642.5	1639.0	1625.2	1603.7	1578.4	1555.4	1535.8	1524.7
36.5°	1606.8	1623.7	1631.0	1629.4	1625.6	1612.2	1590.7	1565.3	1541.9	1522.0	1510.8
37°	1593.4	1610.2	1617.9	1616.4	1612.9	1599.1	1577.2	1552.3	1527.7	1507.8	1497.0
37.5°	1579.9	1596.8	1604.9	1603.0	1599.5	1585.3	1563.8	1538.1	1513.9	1493.9	1482.4
38°	1565.7	1583.0	1591.1	1589.5	1586.1	1572.2	1550.0	1524.3	1500.1	1479.4	1468.2
38.5°	1551.9	1569.2	1577.2	1576.1	1572.2	1558.4	1536.2	1510.4	1485.9	1465.2	1453.6
39°	1537.7	1555.0	1563.4	1561.9	1558.8	1544.6	1522.3	1496.2	1471.7	1450.6	1439.4
39.5°	1523.1	1540.8	1549.2	1548.1	1545.0	1530.4	1507.8	1482.0	1457.1	1436.0	1424.8
40°	1508.5	1526.2	1535.4	1533.9	1530.8	1516.6	1493.6	1467.1	1442.5	1421.4	1409.9
40.5°	1493.9	1511.6	1520.4	1519.7	1516.6	1502.0	1479.0	1452.5	1427.9	1406.0	1395.3
41°	1478.6	1496.6	1505.8	1505.1	1501.6	1487.4	1464.4	1437.9	1413.0	1391.5	1379.9
41.5°	1463.2	1481.7	1490.9	1490.5	1487.4	1472.8	1449.8	1423.3	1398.4	1376.5	1365.0
42°	1448.3	1466.7	1476.3	1475.9	1472.8	1457.9	1434.8	1408.7	1383.0	1361.1	1349.6
42.5°	1432.9	1451.3	1461.3	1460.9	1457.9	1442.9	1419.9	1393.4	1367.7	1346.2	1334.6
43°	1417.6	1435.6	1446.0	1446.0	1443.3	1427.9	1404.9	1378.4	1352.7	1330.4	1319.3
43.5°	1401.8	1420.2	1430.6	1431.0	1427.9	1412.6	1389.5	1363.1	1337.3	1315.1	1303.9



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CATALOG NUMBER: HCDJBL3040CSD-HCD81TRMW-4000lm-2700K

**CANDELA DISTRIBUTION (continued):**

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
45°	1353.5	1371.9	1383.4	1384.2	1381.1	1365.7	1343.1	1317.0	1290.5	1267.9	1257.1
45.5°	1336.6	1355.4	1366.9	1368.4	1365.4	1349.6	1327.0	1300.5	1274.8	1252.1	1241.4
46°	1320.1	1339.3	1350.8	1352.3	1349.2	1333.5	1311.2	1284.7	1258.6	1236.0	1225.2
46.5°	1303.2	1321.6	1334.3	1335.8	1333.1	1317.4	1294.7	1268.6	1242.1	1219.9	1209.1
47°	1285.5	1304.7	1317.4	1319.3	1317.0	1300.5	1277.8	1251.7	1225.6	1203.4	1192.2
47.5°	1267.9	1287.0	1300.1	1302.4	1300.5	1283.6	1260.9	1234.8	1209.1	1186.1	1175.3
48°	1250.2	1269.0	1282.8	1285.1	1282.8	1266.7	1245.2	1218.3	1192.2	1169.2	1158.5
48.5°	1231.4	1250.6	1264.4	1267.5	1265.9	1249.8	1226.8	1201.1	1174.6	1151.9	1140.8
49°	1213.0	1232.5	1246.4	1250.2	1248.3	1231.4	1209.1	1183.0	1156.2	1133.5	1122.4
49.5°	1193.4	1213.3	1227.6	1231.4	1230.2	1213.3	1190.7	1164.6	1138.1	1115.1	1103.6
50°	1173.0	1193.4	1208.4	1212.6	1211.4	1194.9	1172.7	1146.2	1118.9	1095.9	1084.0
50.5°	1152.3	1172.3	1188.4	1192.2	1191.9	1176.1	1153.1	1126.2	1099.3	1075.5	1064.0
51°	1132.0	1151.9	1167.7	1172.7	1172.3	1155.4	1132.4	1105.9	1078.6	1055.2	1043.7
51.5°	1109.7	1130.1	1146.2	1151.5	1152.3	1135.0	1112.0	1085.1	1058.7	1035.6	1023.3
52°	1087.8	1108.9	1125.1	1130.4	1130.8	1113.9	1090.9	1063.6	1036.8	1014.1	1001.8
52.5°	1066.0	1086.3	1103.2	1108.2	1109.3	1092.1	1069.0	1042.2	1016.0	993.0	981.1
53°	1044.1	1064.0	1080.9	1087.1	1087.4	1070.6	1047.1	1020.7	994.9	972.3	960.8
53.5°	1022.6	1041.8	1059.0	1064.8	1066.0	1049.4	1025.6	1000.3	975.0	953.1	942.0
54°	1001.8	1021.4	1037.9	1044.5	1044.8	1027.9	1005.3	980.0	955.8	933.5	922.0
54.5°	980.4	1000.3	1016.8	1023.3	1023.7	1008.0	985.0	958.9	934.7	912.4	901.3
55°	955.8	975.4	993.0	999.9	1002.2	985.3	962.3	935.8	910.9	889.0	877.9
55.5°	928.5	948.1	966.9	973.8	977.3	960.8	936.6	909.7	882.5	859.8	849.8
56°	896.7	918.9	936.2	943.5	949.3	933.1	907.4	878.2	850.6	828.7	818.0
56.5°	862.9	885.9	903.6	911.6	918.2	902.4	876.3	845.6	818.0	794.6	783.8
57°	826.8	849.5	869.0	877.5	885.2	867.9	841.8	811.5	782.7	759.3	747.7
57.5°	788.8	810.3	833.0	842.9	850.6	832.2	806.1	776.1	747.0	723.9	710.9
58°	749.3	771.2	795.7	807.6	815.3	794.6	767.7	738.5	710.5	686.7	673.7
58.5°	710.5	731.6	757.0	771.2	779.2	757.3	730.1	701.7	674.0	651.0	636.4
59°	669.4	692.5	718.6	733.9	740.8	716.6	690.2	662.5	636.0	613.4	598.0
59.5°	629.9	652.2	679.0	694.8	702.1	677.5	650.2	623.4	598.4	576.2	560.8
60°	589.2	613.4	639.5	656.4	663.3	638.0	610.3	583.5	561.2	539.7	524.7
60.5°	550.8	574.6	599.6	616.5	624.5	600.0	570.4	545.5	524.0	502.8	488.3
61°	512.1	536.6	559.7	576.5	584.2	561.2	531.6	505.9	486.3	467.5	452.9
61.5°	474.4	499.8	521.3	535.9	545.8	524.7	493.6	468.3	449.9	433.0	418.0
62°	438.0	462.2	483.7	496.3	507.8	486.3	456.8	431.1	414.2	399.2	385.0
62.5°	402.7	426.5	446.4	456.4	468.7	449.5	419.9	394.6	381.2	367.7	354.3
63°	368.5	391.1	410.0	418.4	431.4	413.4	387.7	362.0	348.2	336.3	323.2
63.5°	335.1	357.0	373.1	379.6	395.4	380.4	355.1	329.0	315.1	304.4	292.1
64°	302.9	323.2	338.6	343.5	361.2	347.0	322.4	295.9	282.1	272.9	261.4
64.5°	272.5	291.7	304.8	308.6	327.0	314.0	289.8	263.3	249.5	241.1	233.8
65°	244.5	261.0	272.1	275.6	292.5	280.6	257.6	234.5	220.7	213.4	208.4
65.5°	216.1	231.5	241.4	244.9	258.3	247.6	228.4	208.0	194.6	187.3	185.0
66°	187.3	203.1	211.5	215.0	226.9	217.3	201.9	183.9	169.7	163.5	163.1





TEST NUMBER: P776455

CATALOG NUMBER: HCDJBL3040CSD-HCD81TRMW-4000lm-2700K

**CANDELA DISTRIBUTION (continued):**

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
67.5°	122.8	130.9	136.3	139.3	146.2	142.0	133.2	122.4	107.1	107.5	109.8
68°	108.6	115.9	122.1	124.8	124.8	120.9	114.0	106.7	92.5	94.4	96.3
68.5°	94.4	101.3	108.2	110.2	106.3	102.5	98.3	92.9	81.0	84.4	85.2
69°	80.6	86.8	94.4	96.0	91.0	87.5	85.6	81.4	72.5	76.0	76.0
69.5°	66.4	72.2	80.6	81.4	78.7	76.4	74.9	72.2	66.8	69.1	68.7
70°	63.0	65.3	66.8	66.8	69.5	68.3	67.2	65.6	63.3	63.7	64.1
70.5°	59.9	61.0	62.2	62.2	63.7	63.3	63.0	61.8	60.3	60.6	60.6
71°	56.4	58.0	59.1	59.1	60.3	60.3	59.9	58.7	57.2	57.6	58.0
71.5°	53.4	55.3	56.4	56.4	57.6	57.2	56.8	55.7	53.7	54.5	54.9
72°	50.3	52.2	53.4	53.4	54.5	54.5	54.1	53.0	51.1	51.8	52.2
72.5°	47.6	49.1	50.7	50.7	51.8	51.4	51.1	49.9	48.0	48.7	49.5
73°	44.5	46.4	47.6	48.0	49.1	48.7	48.4	47.2	45.3	46.1	46.8
73.5°	41.8	43.8	44.9	45.3	46.4	46.1	45.7	44.5	42.6	43.4	44.1
74°	39.5	41.1	42.6	42.6	43.8	43.4	43.4	41.8	39.9	40.7	41.5
74.5°	36.8	38.4	39.9	39.9	41.1	41.1	40.7	39.2	37.2	38.4	39.2
75°	34.5	36.1	37.6	37.6	38.8	38.4	38.4	36.8	34.9	35.7	36.8
75.5°	32.2	33.8	35.3	35.3	36.5	36.1	36.1	34.5	33.0	33.4	34.5
76°	29.9	31.5	33.0	33.0	34.2	34.2	33.8	32.2	30.7	31.5	32.6
76.5°	28.0	29.2	30.7	31.1	32.2	31.9	31.9	30.3	28.8	29.6	30.3
77°	26.1	27.3	28.8	29.2	29.9	29.9	29.6	28.4	26.5	27.3	28.4
77.5°	24.2	25.3	26.9	27.3	28.0	28.0	27.6	26.1	24.6	25.3	26.5
78°	22.3	23.4	25.0	25.3	26.1	26.1	25.7	24.2	22.6	23.4	24.2
78.5°	20.7	21.9	23.0	23.4	24.2	24.2	23.8	22.3	20.7	21.5	22.6
79°	19.2	20.0	21.5	21.9	22.3	22.3	21.9	20.3	19.2	19.6	20.7
79.5°	17.3	18.4	20.0	20.0	20.7	20.7	20.3	18.8	17.7	18.0	19.2
80°	16.1	16.9	18.0	18.4	19.2	19.2	18.8	17.3	16.1	16.5	17.7
80.5°	14.6	15.4	16.5	16.9	17.7	17.7	17.3	15.7	14.6	15.0	16.1
81°	13.1	13.8	15.4	15.7	16.1	16.1	15.7	14.2	13.1	13.4	14.6
81.5°	11.9	12.7	13.8	14.2	14.6	14.6	14.2	13.1	11.9	12.3	13.1
82°	10.7	11.5	12.7	12.7	13.4	13.4	13.1	11.5	10.7	10.7	11.9
82.5°	9.2	10.0	11.1	11.5	11.9	11.9	11.5	10.4	9.2	9.6	10.7
83°	8.1	8.8	10.0	10.4	10.7	10.7	10.4	9.2	8.1	8.4	9.6
83.5°	7.3	7.7	8.8	9.2	9.6	9.6	9.2	8.1	7.3	7.3	8.4
84°	6.1	6.5	7.7	8.1	8.4	8.4	8.1	6.9	6.1	6.5	7.3
84.5°	5.4	5.8	6.5	6.9	7.3	7.3	6.9	5.8	5.4	5.4	6.1
85°	4.6	5.0	5.8	6.1	6.5	6.5	6.1	5.0	4.6	4.6	5.4
85.5°	3.5	3.8	5.0	5.4	5.4	5.4	5.0	3.8	3.8	3.5	4.6
86°	3.1	3.1	4.2	4.2	4.6	4.6	4.2	3.1	3.1	2.7	3.8
86.5°	2.3	2.3	3.5	3.5	3.8	3.8	3.5	2.7	2.3	2.3	3.1
87°	1.5	1.9	2.7	3.1	3.1	3.1	2.7	1.9	1.5	1.5	2.3
87.5°	1.2	1.5	1.9	2.3	2.3	2.3	2.3	1.5	1.2	1.2	1.9
88°	0.8	1.2	1.5	1.5	1.9	1.9	1.5	1.2	0.8	0.8	1.2
88.5°	0.4	0.8	0.8	1.2	1.2	1.2	1.2	0.8	0.4	0.4	0.8



TEST NUMBER: P776455

CATALOG NUMBER: HCDJBL3040CSD-HCD81TRMW-4000lm-2700K

**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: P776455

CATALOG NUMBER: HCDJBL3040CSD-HCD81TRMW-4000lm-2700K

**CANDELA DISTRIBUTION (continued):**

	247.5°	270°	292.5°	315°	337.5°	360°
0°	2055.9	2055.9	2055.9	2055.9	2055.9	2055.9
0.5°	2055.1	2053.6	2054.4	2055.5	2056.7	2057.1
1°	2054.0	2052.4	2053.6	2055.1	2056.7	2057.1
1.5°	2052.8	2051.3	2052.4	2054.7	2056.7	2057.4
2°	2051.3	2050.1	2051.3	2054.0	2056.3	2057.1
2.5°	2049.8	2048.6	2050.1	2052.8	2055.5	2056.7
3°	2047.8	2046.7	2048.6	2051.7	2054.7	2056.7
3.5°	2045.9	2044.8	2047.1	2050.5	2054.0	2055.9
4°	2043.6	2042.8	2045.2	2049.0	2052.8	2055.5
4.5°	2041.3	2040.5	2043.2	2047.5	2051.7	2054.4
5°	2039.0	2037.9	2041.3	2045.5	2050.1	2053.6
5.5°	2035.9	2035.6	2039.0	2043.6	2048.6	2052.4
6°	2033.3	2032.9	2036.3	2041.7	2046.7	2050.9
6.5°	2030.6	2029.8	2033.6	2039.0	2044.8	2049.4
7°	2027.1	2026.7	2031.3	2036.7	2042.8	2047.5
7.5°	2024.0	2023.3	2028.3	2034.0	2040.5	2045.5
8°	2020.2	2019.8	2024.8	2030.9	2038.2	2043.6
8.5°	2016.7	2016.0	2021.4	2028.3	2035.2	2040.9
9°	2012.9	2012.1	2017.5	2024.8	2032.5	2038.6
9.5°	2008.7	2008.3	2014.1	2021.4	2029.4	2035.9
10°	2004.5	2004.1	2010.2	2017.9	2026.3	2033.3
10.5°	1999.9	1999.9	2006.0	2014.1	2022.9	2030.2
11°	1995.6	1995.3	2001.8	2010.2	2019.4	2027.1
11.5°	1990.6	1990.6	1997.2	2006.0	2016.0	2023.7
12°	1985.7	1985.7	1992.6	2001.8	2011.8	2020.2
12.5°	1980.7	1980.7	1988.0	1997.2	2007.9	2016.7
13°	1975.3	1975.3	1983.0	1992.6	2003.7	2012.5
13.5°	1969.5	1969.9	1977.6	1987.6	1999.1	2008.3
14°	1963.8	1963.8	1972.2	1982.6	1994.5	2004.1
14.5°	1958.0	1958.0	1966.8	1977.6	1989.5	1999.9
15°	1952.3	1952.3	1961.1	1972.2	1984.5	1995.3
15.5°	1945.7	1946.1	1954.6	1966.5	1979.5	1990.3
16°	1939.2	1939.6	1948.4	1960.7	1974.1	1985.3
16.5°	1932.7	1933.1	1942.3	1954.6	1968.4	1980.3
17°	1926.2	1926.5	1935.8	1948.4	1962.6	1974.5
17.5°	1918.5	1919.2	1929.2	1942.3	1956.9	1969.1
18°	1911.6	1912.3	1921.9	1935.8	1950.3	1963.4
18.5°	1904.3	1904.7	1915.0	1928.8	1944.2	1957.6
19°	1896.6	1897.4	1907.7	1921.9	1937.7	1951.1
19.5°	1888.9	1889.3	1900.1	1915.0	1931.1	1945.0
20°	1880.9	1881.6	1892.4	1907.7	1923.9	1938.4
20.5°	1872.4	1873.2	1884.7	1900.1	1916.9	1931.9
21°	1864.0	1864.7	1876.3	1892.4	1909.7	1924.6

TEST NUMBER: P776455

CATALOG NUMBER: HCDJBL3040CSD-HCD81TRMW-4000lm-2700K

**CANDELA DISTRIBUTION (continued):**

	247.5°	270°	292.5°	315°	337.5°	360°
22.5°	1837.5	1838.6	1851.3	1867.8	1886.6	1902.7
23°	1828.7	1829.4	1842.1	1859.4	1878.6	1894.7
23.5°	1819.1	1820.2	1833.3	1850.9	1870.1	1887.0
24°	1809.5	1810.6	1824.1	1841.7	1861.7	1878.6
24.5°	1799.9	1801.0	1814.1	1832.9	1852.8	1870.1
25°	1789.9	1791.0	1804.5	1823.3	1844.0	1861.3
25.5°	1779.5	1781.1	1794.9	1814.1	1834.8	1852.8
26°	1769.5	1770.7	1784.9	1804.1	1825.6	1844.0
26.5°	1758.8	1760.3	1774.9	1794.5	1815.6	1834.8
27°	1748.1	1749.6	1764.2	1784.1	1806.0	1825.2
27.5°	1737.3	1738.5	1753.4	1773.8	1796.0	1815.6
28°	1726.2	1727.3	1742.7	1763.4	1786.1	1805.6
28.5°	1714.7	1716.2	1731.9	1752.7	1775.7	1795.6
29°	1703.1	1704.7	1720.0	1741.9	1764.9	1785.7
29.5°	1691.2	1693.2	1708.9	1730.8	1754.2	1774.9
30°	1679.0	1680.9	1697.4	1719.3	1743.4	1764.2
30.5°	1667.1	1669.0	1685.1	1707.7	1731.9	1753.8
31°	1655.2	1656.7	1673.6	1696.2	1720.4	1742.3
31.5°	1642.5	1644.4	1661.3	1684.3	1708.9	1731.2
32°	1629.8	1631.4	1648.6	1672.4	1697.4	1719.6
32.5°	1616.8	1618.7	1636.0	1659.8	1685.5	1707.7
33°	1604.1	1606.0	1623.7	1647.5	1673.6	1696.2
33.5°	1591.1	1592.6	1610.2	1635.2	1660.9	1683.9
34°	1577.6	1579.2	1597.2	1622.1	1648.3	1671.3
34.5°	1563.8	1566.1	1584.1	1609.1	1635.6	1659.0
35°	1550.4	1551.9	1570.7	1596.0	1622.5	1646.3
35.5°	1536.9	1538.9	1556.9	1582.6	1609.5	1633.3
36°	1523.1	1524.7	1543.5	1569.2	1596.0	1620.2
36.5°	1508.9	1511.2	1529.6	1555.7	1583.0	1606.8
37°	1495.1	1497.0	1515.4	1541.9	1569.2	1593.4
37.5°	1480.5	1482.4	1501.2	1527.7	1555.4	1579.9
38°	1466.3	1467.8	1486.6	1513.5	1541.2	1565.7
38.5°	1452.1	1453.6	1472.4	1499.3	1527.0	1551.9
39°	1437.1	1439.1	1457.9	1485.1	1512.8	1537.7
39.5°	1422.5	1424.1	1443.3	1470.1	1498.5	1523.1
40°	1408.0	1409.5	1428.3	1455.6	1484.0	1508.5
40.5°	1393.0	1394.5	1413.0	1440.6	1469.4	1493.9
41°	1378.4	1379.6	1398.4	1425.6	1454.0	1478.6
41.5°	1363.1	1363.8	1382.6	1410.3	1439.1	1463.2
42°	1348.1	1349.2	1367.7	1395.7	1424.1	1448.3
42.5°	1333.1	1333.5	1352.3	1380.3	1408.3	1432.9
43°	1317.4	1318.5	1337.3	1364.6	1393.0	1417.6
43.5°	1302.0	1302.8	1321.2	1348.8	1377.3	1401.8



TEST NUMBER: P776455

CATALOG NUMBER: HCDJBL3040CSD-HCD81TRMW-4000lm-2700K

**CANDELA DISTRIBUTION (continued):**

	247.5°	270°	292.5°	315°	337.5°	360°
45°	1255.6	1256.0	1273.6	1301.3	1329.7	1353.5
45.5°	1239.8	1239.8	1257.5	1285.1	1312.8	1336.6
46°	1223.7	1223.3	1241.0	1268.6	1296.3	1320.1
46.5°	1207.6	1206.4	1224.5	1251.7	1279.4	1303.2
47°	1191.1	1190.3	1207.2	1234.5	1262.1	1285.5
47.5°	1173.8	1172.7	1189.2	1216.8	1244.4	1267.9
48°	1156.5	1155.0	1171.5	1198.8	1226.0	1250.2
48.5°	1138.9	1136.6	1153.5	1180.3	1207.6	1231.4
49°	1120.5	1118.2	1134.7	1161.1	1189.2	1213.0
49.5°	1101.6	1099.0	1115.1	1142.3	1169.6	1193.4
50°	1082.1	1078.6	1095.1	1121.6	1149.6	1173.0
50.5°	1062.1	1059.0	1074.8	1101.3	1128.5	1152.3
51°	1041.8	1038.3	1054.4	1080.9	1107.8	1132.0
51.5°	1021.0	1017.6	1032.9	1060.2	1086.7	1109.7
52°	999.5	996.9	1012.6	1038.7	1064.8	1087.8
52.5°	978.8	976.1	991.9	1017.2	1041.8	1066.0
53°	958.9	956.6	971.9	996.9	1021.4	1044.1
53.5°	939.3	937.7	953.1	977.3	1001.1	1022.6
54°	920.5	918.6	933.5	958.1	981.1	1001.8
54.5°	899.4	897.1	912.4	936.2	959.2	980.4
55°	876.7	872.5	889.0	912.8	935.8	955.8
55.5°	849.8	843.3	859.8	883.6	907.0	928.5
56°	817.2	811.1	828.0	851.4	875.2	896.7
56.5°	783.1	776.5	793.0	817.6	840.6	862.9
57°	747.7	740.1	757.0	781.5	805.7	826.8
57.5°	710.9	702.1	720.5	745.1	768.5	788.8
58°	673.7	663.7	683.3	708.2	730.8	749.3
58.5°	634.9	626.1	645.6	671.0	689.8	710.5
59°	596.1	587.3	607.6	631.8	651.8	669.4
59.5°	558.1	550.8	570.4	594.2	612.6	629.9
60°	520.1	513.6	533.6	555.8	572.3	589.2
60.5°	483.3	477.1	496.7	517.4	532.0	550.8
61°	446.4	440.7	459.9	479.0	494.0	512.1
61.5°	412.3	407.3	424.5	442.6	456.8	474.4
62°	381.2	372.7	390.8	405.3	418.8	438.0
62.5°	350.5	340.5	357.0	369.6	383.5	402.7
63°	319.7	309.4	324.0	335.1	348.2	368.5
63.5°	289.0	279.4	292.9	302.1	315.1	335.1
64°	258.3	250.7	261.8	270.2	282.5	302.9
64.5°	232.6	224.6	233.0	240.7	253.3	272.5
65°	208.4	199.2	205.7	212.3	224.9	244.5
65.5°	185.8	176.6	180.0	186.2	198.5	216.1
66°	164.3	155.1	155.8	162.4	174.3	187.3



TEST NUMBER: P776455

CATALOG NUMBER: HCDJBL3040CSD-HCD81TRMW-4000lm-2700K

**CANDELA DISTRIBUTION (continued):**

	247.5°	270°	292.5°	315°	337.5°	360°
67.5°	112.1	110.5	109.8	114.8	118.6	122.8
68°	97.9	97.9	97.5	101.3	104.8	108.6
68.5°	86.0	85.2	85.2	87.9	91.4	94.4
69°	76.4	72.5	72.9	74.5	77.5	80.6
69.5°	68.7	66.0	66.4	67.6	69.1	66.4
70°	63.7	62.2	62.6	63.3	63.7	63.0
70.5°	60.6	59.5	59.9	60.3	60.3	59.9
71°	58.0	56.4	56.8	57.6	57.6	56.4
71.5°	54.9	53.7	54.1	54.5	54.5	53.4
72°	52.2	50.7	51.1	51.8	51.4	50.3
72.5°	49.1	48.0	48.4	49.1	48.7	47.6
73°	46.4	45.3	45.7	46.1	45.7	44.5
73.5°	44.1	43.0	43.0	43.8	43.0	41.8
74°	41.5	40.3	40.7	41.1	40.7	39.5
74.5°	39.2	38.0	38.4	38.8	38.0	36.8
75°	36.8	35.7	36.1	36.1	35.7	34.5
75.5°	34.5	33.4	33.8	34.2	33.4	32.2
76°	32.6	31.5	31.5	31.9	31.1	29.9
76.5°	30.3	29.2	29.6	29.6	28.8	28.0
77°	28.4	27.3	27.6	27.6	26.9	26.1
77.5°	26.5	25.3	25.7	25.7	25.0	24.2
78°	24.6	23.8	23.8	24.2	23.0	22.3
78.5°	22.6	21.9	22.3	22.3	21.5	20.7
79°	21.1	20.3	20.3	20.7	19.6	19.2
79.5°	19.6	18.8	18.8	18.8	18.0	17.3
80°	18.0	17.3	17.3	17.3	16.5	16.1
80.5°	16.5	15.7	15.7	15.7	15.0	14.6
81°	15.0	14.6	14.6	14.6	13.8	13.1
81.5°	13.4	13.1	13.4	13.1	12.3	11.9
82°	12.3	11.9	11.9	11.9	11.1	10.7
82.5°	11.1	10.7	10.7	10.7	9.6	9.2
83°	10.0	9.2	9.6	9.2	8.4	8.1
83.5°	8.8	8.4	8.4	8.1	7.3	7.3
84°	7.7	7.3	7.3	7.3	6.5	6.1
84.5°	6.5	6.1	6.5	6.1	5.4	5.4
85°	5.8	5.4	5.4	5.4	4.6	4.6
85.5°	5.0	4.6	4.6	4.6	3.5	3.5
86°	3.8	3.8	3.8	3.8	3.1	3.1
86.5°	3.5	3.1	3.1	3.1	2.3	2.3
87°	2.7	2.3	2.3	2.3	1.9	1.5
87.5°	1.9	1.5	1.5	1.5	1.5	1.2
88°	1.2	1.2	1.2	1.2	0.8	0.8
88.5°	0.8	0.4	0.4	0.4	0.4	0.4



TEST NUMBER: P776455  
CATALOG NUMBER: HCDJBL3040CSD-HCD81TRMW-4000lm-2700K

**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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Peachtree City, GA 30269

Scaled Data Report



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Scaled Data Report





21.5°	1917.3	1927.7	1932.3	1930.8	1926.5	1916.9	1903.1	1887.8	1873.6	1861.3	1855.1
22°	1910.0	1920.8	1925.0	1923.9	1919.6	1909.7	1895.4	1880.1	1865.5	1853.2	1846.3



44°	1385.7	1404.5	1414.9	1415.3	1412.2	1397.2	1374.2	1348.1	1321.6	1299.3	1288.6
44.5°	1369.6	1388.0	1398.7	1399.9	1397.2	1381.1	1358.4	1332.3	1306.2	1284.0	1272.8



66.5°	160.8	177.7	184.2	187.7	198.1	190.0	176.6	160.8	146.2	142.0	143.6
67°	137.0	153.2	158.9	162.0	171.6	165.1	153.5	140.9	124.8	123.2	125.5



89°	0.0	0.4	0.4	0.4	0.8	0.4	0.4	0.4	0.0	0.0	0.0
89.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0



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21.5°	1855.5	1856.7	1868.2	1884.7	1902.0	1917.3
22°	1846.7	1847.9	1859.8	1876.3	1894.3	1910.0



44°	1286.7	1287.4	1305.9	1333.5	1361.5	1385.7
44.5°	1271.3	1271.7	1289.7	1317.8	1345.8	1369.6



66.5°	145.1	136.3	134.7	141.3	153.2	160.8
67°	128.2	123.6	122.1	127.8	132.4	137.0

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89°	0.0	0.0	0.0	0.0	0.0	0.0
89.5°	0.0	0.0	0.0	0.0	0.0	0.0

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Scaled Data Report



(END OF REPORT)