

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: P776358

Luminaire Tested: HCDJBL3040CSD-HCD61TRMW-4000lm-4000K

Issue Date: 2/13/2024

Test Information

Test Method: LM-79-2019
Report Number: P776358
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (A2312156B037)
Test Lab:
Issue Date: 2/13/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: HALO COMMERCIAL
Catalog Number: HCDJBL3040CSD-HCD61TRMW-4000lm-4000K
Description: 6 INCH ROUND SHALLOW-WIDE MATTE WHITE TRIM
Light Source: SELECTABLE LUMENS AND CCT ARRAY 90CRI / 4000K CCT
Ballast/Driver: -

Summary

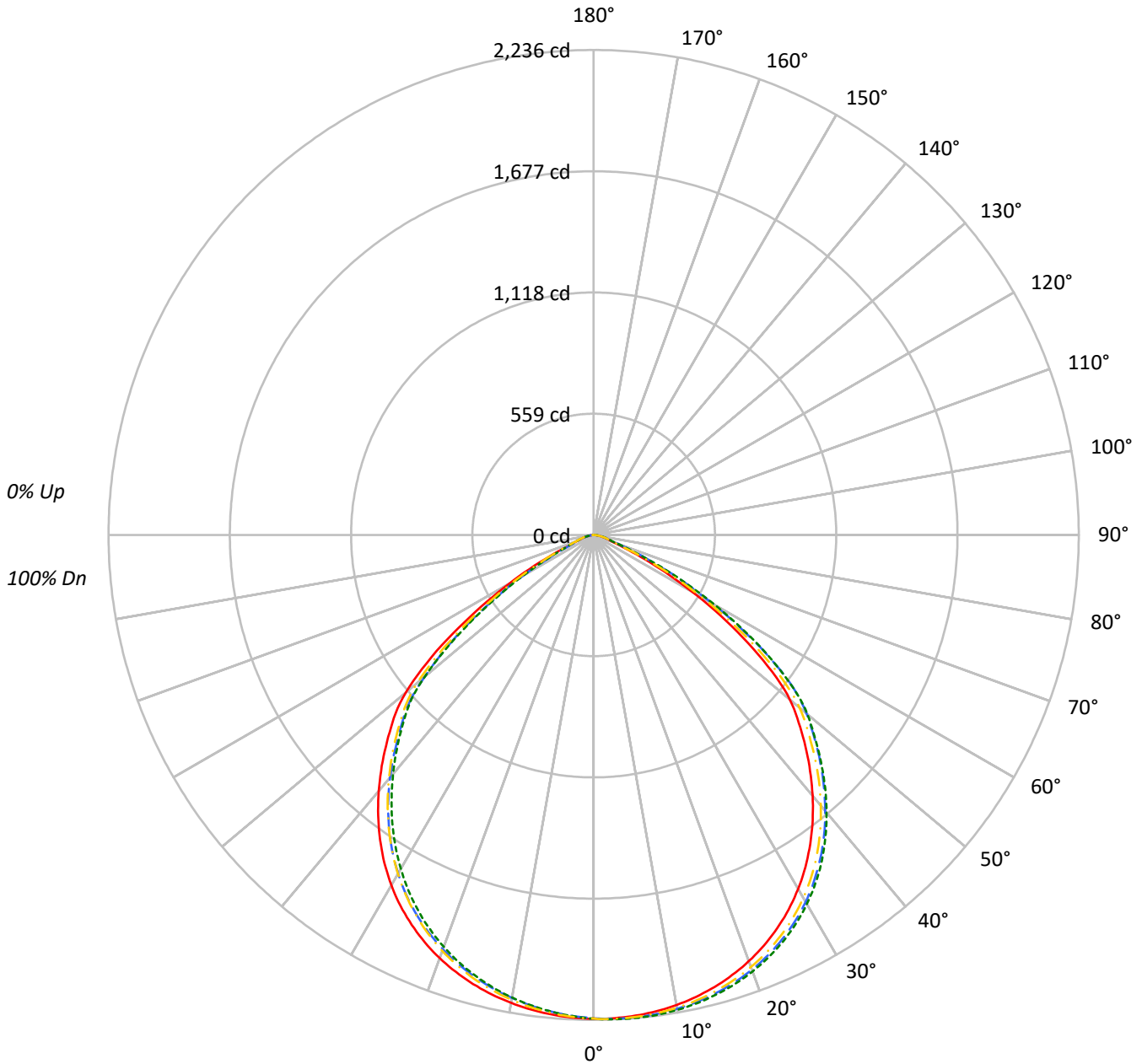
Lumens per Lamp: N/A
Luminaire Lumens: 4921.1 lumens
Efficiency: N/A
Efficacy: 127.8 lumens/watt
Spacing Criteria (0/90/45): 1.25 / 1.24 / 1.32
Luminous Opening: Circular (Dia: 0.5' x H: 0')
CIE Type: Direct

Input Watts (W): 38.5
Input Voltage (V): NR
Input Current (A_{in}): 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	104	101	109	105	102	99	101	99	96	97	95	93	94	92	91	89	89	89	89	89	89		
	2	103	96	91	86	100	94	89	85	91	87	83	88	84	81	85	82	79	77	77	77	77	77	77		
	3	95	86	79	74	93	85	78	73	82	76	72	79	74	71	77	73	69	67	67	67	67	67	67		
	4	88	77	70	64	86	76	69	63	74	67	63	71	66	62	69	65	61	59	59	59	59	59	59		
	5	81	70	62	56	79	69	61	56	67	60	55	65	59	55	63	58	54	52	52	52	52	52	52		
	6	75	63	55	49	74	62	55	49	61	54	49	59	53	48	58	52	48	46	46	46	46	46	46		
	7	70	58	50	44	68	57	49	44	55	49	44	54	48	43	53	47	43	41	41	41	41	41	41		
	8	65	53	45	40	64	52	45	39	51	44	39	50	44	39	49	43	39	37	37	37	37	37	37		
	9	61	49	41	36	60	48	41	36	47	40	36	46	40	35	45	39	35	34	34	34	34	34	34		
	10	57	45	38	33	56	44	37	33	44	37	32	43	37	32	42	36	32	30	30	30	30	30	30		

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°	270°
0°	122243	122243	122243	122243
5°	122424	123046	122160	121472
10°	122515	123795	121981	120567
15°	122418	124456	121686	119445
20°	122003	124943	121111	117890
25°	121065	125033	120013	115676
30°	119297	124399	118050	112536
35°	116446	122670	114880	108275
40°	112346	119495	110271	102943
45°	107027	114903	104437	96715
50°	100696	109694	96295	86667
55°	83036	95547	75639	64743
60°	57616	70290	49393	40775
65°	31210	41496	23569	20858
70°	14858	17631	12983	12919
75°	11946	13492	9891	10421
80°	9029	11081	6756	7892
85°	5598	8869	2768	4592

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 67.5°
 Vertical Angle: 45°
 Luminance: 118121 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	211.2	4.3
10°-20°	606.3	12.3
20°-30°	916.3	18.6
30°-40°	1077.7	21.9
40°-50°	1049.5	21.3
50°-60°	740.3	15.0
60°-70°	248.0	5.0
70°-80°	59.9	1.2
80°-90°	11.9	0.2
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°	1733.9	35.2
0°-40°	2811.6	57.1
0°-60°	4601.3	93.5
0°-90°	4921.1	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4921.1	100.0

CANDELA DISTRIBUTION:

	0°	90°	180°	270°	360°	Flux
0°	2230	2230	2230	2230	2230	
5°	2225	2236	2220	2207	2225	212
15°	2157	2193	2144	2105	2157	609
25°	2002	2067	1984	1912	2002	921
35°	1740	1833	1717	1618	1740	1086
45°	1380	1482	1347	1248	1380	1064
55°	869	1000	791	677	869	770
65°	241	320	182	161	241	258
75°	56	64	47	49	56	61
85°	9	14	4	7	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°	2229.9	2229.9	2229.9	2229.9	2229.9	2229.9	2229.9	2229.9	2229.9	2229.9	2229.9
0.5°	2231.2	2230.7	2229.5	2227.5	2232.0	2232.4	2232.0	2232.0	2230.7	2229.1	2227.1
1°	2231.2	2231.2	2230.7	2229.1	2233.2	2233.2	2232.8	2232.0	2230.3	2228.3	2225.5
1.5°	2231.2	2231.6	2231.2	2230.3	2234.0	2234.0	2233.2	2231.6	2229.1	2226.7	2223.9
2°	2230.7	2231.6	2232.0	2231.6	2234.8	2234.4	2233.2	2231.2	2228.3	2225.5	2221.9
2.5°	2229.9	2231.6	2232.4	2232.4	2235.6	2234.4	2233.2	2230.7	2227.5	2223.9	2220.3
3°	2229.5	2231.6	2232.8	2233.2	2235.6	2234.8	2233.2	2229.9	2225.9	2222.3	2217.9
3.5°	2228.3	2231.6	2233.2	2234.0	2236.0	2234.8	2232.8	2229.1	2224.7	2220.3	2215.4
4°	2227.5	2230.7	2232.8	2234.4	2236.0	2234.8	2232.4	2228.3	2223.5	2218.3	2213.0
4.5°	2225.9	2229.9	2232.8	2234.8	2236.4	2234.4	2232.0	2226.7	2221.5	2215.8	2209.8
5°	2224.7	2229.1	2232.4	2234.8	2236.0	2234.0	2230.7	2225.5	2219.9	2213.4	2207.4
5.5°	2223.1	2228.3	2231.6	2234.4	2235.6	2233.2	2229.9	2223.9	2217.9	2211.0	2204.2
6°	2221.5	2226.7	2231.2	2234.4	2234.8	2232.4	2229.1	2222.3	2215.4	2208.2	2200.9
6.5°	2219.5	2225.5	2229.9	2234.0	2234.0	2231.6	2227.5	2220.3	2213.0	2205.0	2197.3
7°	2217.5	2223.9	2228.7	2233.2	2233.2	2229.9	2226.3	2218.3	2210.6	2202.1	2193.7
7.5°	2215.0	2222.3	2227.5	2232.4	2232.0	2228.7	2224.7	2215.8	2207.8	2198.9	2189.6
8°	2212.6	2220.3	2225.9	2231.6	2230.7	2227.1	2222.7	2213.4	2205.0	2195.3	2186.0
8.5°	2209.8	2218.3	2224.7	2230.7	2229.1	2225.5	2220.3	2211.0	2201.7	2191.7	2181.6
9°	2207.0	2215.8	2222.7	2229.1	2227.5	2223.5	2218.3	2208.2	2198.5	2187.6	2177.6
9.5°	2203.8	2213.4	2220.7	2227.5	2225.9	2221.5	2216.2	2205.4	2194.9	2183.6	2172.7
10°	2200.9	2210.6	2218.7	2225.9	2223.9	2219.1	2213.4	2201.7	2191.3	2179.6	2168.3
10.5°	2197.3	2207.8	2216.2	2224.3	2221.5	2216.2	2210.6	2198.5	2187.2	2175.1	2163.1
11°	2193.7	2204.6	2213.4	2221.9	2219.1	2213.8	2207.8	2194.9	2183.2	2170.7	2158.2
11.5°	2189.6	2201.3	2211.0	2219.9	2216.2	2210.6	2204.6	2191.3	2179.2	2165.9	2153.0
12°	2185.6	2197.7	2207.8	2217.5	2213.4	2207.8	2201.3	2187.2	2174.7	2161.0	2147.7
12.5°	2181.2	2194.1	2204.6	2214.6	2210.6	2204.6	2197.7	2183.2	2169.9	2155.8	2142.1
13°	2176.8	2190.1	2201.3	2211.8	2207.4	2201.3	2194.1	2178.8	2165.1	2150.6	2136.1
13.5°	2171.9	2186.4	2197.7	2209.0	2204.2	2197.3	2190.1	2174.3	2160.2	2144.9	2130.0
14°	2167.1	2182.0	2194.1	2205.8	2200.5	2193.7	2186.0	2169.5	2155.0	2139.3	2124.0
14.5°	2162.2	2177.6	2190.1	2202.5	2196.5	2189.6	2181.6	2164.7	2149.4	2133.2	2117.1
15°	2157.0	2172.7	2186.0	2198.5	2192.9	2185.6	2177.2	2159.4	2144.1	2127.6	2110.7
15.5°	2151.4	2167.9	2181.6	2194.9	2188.8	2180.8	2172.3	2154.2	2138.1	2121.1	2103.8
16°	2145.7	2162.6	2177.2	2190.9	2184.4	2176.3	2167.1	2148.5	2132.4	2114.7	2097.0
16.5°	2139.7	2157.4	2171.9	2187.2	2179.6	2171.5	2162.2	2142.9	2126.0	2107.8	2089.7
17°	2133.2	2151.8	2167.5	2182.4	2175.1	2166.3	2157.0	2136.9	2119.5	2101.0	2082.1
17.5°	2126.8	2146.1	2162.2	2178.0	2169.9	2161.0	2151.4	2130.4	2112.7	2093.7	2074.4
18°	2120.3	2140.1	2157.0	2173.1	2164.7	2155.8	2145.3	2124.0	2105.8	2086.5	2066.7
18.5°	2113.5	2134.0	2151.4	2167.9	2159.0	2149.8	2139.3	2117.5	2099.0	2078.8	2058.3
19°	2106.2	2127.6	2145.3	2162.6	2153.8	2144.1	2133.2	2110.7	2091.3	2071.2	2050.2
19.5°	2099.0	2120.7	2139.3	2157.4	2147.7	2137.7	2126.8	2103.4	2083.7	2063.1	2041.8
20°	2091.3	2113.9	2132.8	2151.8	2141.7	2131.2	2120.3	2096.2	2076.0	2054.7	2032.9
20.5°	2083.7	2107.0	2126.8	2145.7	2135.2	2124.4	2113.1	2088.5	2068.0	2046.2	2023.6
21°	2075.6	2099.4	2119.9	2139.7	2128.8	2117.5	2105.8	2080.4	2059.9	2037.7	2014.8



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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°	2049.4	2076.0	2098.2	2120.3	2107.4	2095.4	2082.9	2055.9	2033.3	2009.9	1985.8
23°	2040.6	2068.0	2090.5	2113.1	2099.8	2087.7	2074.8	2047.0	2023.6	2000.3	1974.9
23.5°	2031.3	2059.1	2082.5	2105.8	2092.1	2079.6	2066.3	2037.7	2014.4	1990.2	1964.8
24°	2021.6	2050.2	2074.0	2098.6	2084.1	2071.2	2057.5	2028.5	2004.3	1980.1	1953.9
24.5°	2011.9	2041.0	2065.5	2090.5	2075.6	2062.3	2048.6	2018.8	1994.2	1969.2	1943.0
25°	2001.5	2031.3	2056.7	2082.5	2067.1	2053.4	2039.7	2009.1	1984.1	1958.8	1931.8
25.5°	1991.0	2021.6	2047.8	2074.0	2058.3	2044.2	2030.1	1998.6	1973.3	1947.9	1919.7
26°	1980.1	2011.5	2038.1	2065.5	2049.0	2034.9	2020.4	1988.2	1962.4	1936.6	1908.0
26.5°	1969.6	2001.5	2028.9	2056.7	2039.7	2024.8	2010.7	1977.7	1951.1	1924.5	1895.9
27°	1957.9	1990.6	2018.8	2047.4	2030.1	2015.2	2000.3	1966.4	1939.8	1913.2	1883.4
27.5°	1946.7	1980.1	2008.7	2038.1	2020.0	2004.7	1989.4	1955.1	1928.1	1901.1	1870.9
28°	1934.6	1969.2	1998.6	2028.5	2009.5	1993.8	1978.9	1943.8	1916.0	1888.2	1857.6
28.5°	1922.9	1957.5	1987.8	2018.8	1999.1	1982.9	1967.6	1932.2	1903.6	1875.7	1844.7
29°	1910.4	1945.9	1976.9	2008.3	1988.2	1971.6	1955.9	1920.1	1891.1	1862.4	1831.0
29.5°	1897.5	1934.2	1965.2	1997.8	1976.9	1960.0	1944.2	1907.6	1877.8	1849.2	1817.3
30°	1884.6	1921.7	1953.9	1987.0	1965.2	1948.7	1932.6	1894.7	1864.9	1835.5	1802.8
30.5°	1871.7	1909.2	1942.2	1975.7	1953.5	1936.2	1919.7	1881.8	1851.2	1821.3	1788.3
31°	1858.0	1896.7	1929.7	1964.8	1941.4	1923.7	1907.2	1868.5	1837.5	1807.2	1773.8
31.5°	1844.3	1883.4	1917.3	1952.7	1928.9	1910.8	1894.7	1854.8	1823.4	1792.7	1758.5
32°	1830.2	1869.7	1904.4	1940.6	1916.4	1897.9	1881.0	1840.7	1808.9	1777.8	1743.2
32.5°	1815.7	1856.4	1891.5	1928.1	1903.1	1884.6	1867.3	1826.6	1794.4	1762.5	1727.1
33°	1801.2	1842.3	1877.8	1915.6	1889.9	1870.5	1853.6	1812.5	1779.4	1747.2	1711.3
33.5°	1786.3	1827.8	1864.1	1902.3	1876.1	1856.4	1839.5	1797.6	1763.7	1731.1	1695.6
34°	1771.0	1813.7	1850.4	1889.4	1862.4	1842.3	1825.0	1782.3	1748.0	1715.0	1678.7
34.5°	1756.1	1798.8	1835.9	1875.7	1847.9	1827.8	1810.1	1766.9	1732.3	1698.9	1662.2
35°	1740.0	1783.9	1821.3	1861.6	1833.0	1812.9	1795.2	1751.6	1716.6	1682.3	1644.9
35.5°	1724.2	1768.2	1806.4	1847.5	1818.1	1798.0	1779.4	1735.5	1700.1	1665.0	1627.5
36°	1707.3	1752.4	1791.1	1833.0	1803.2	1781.9	1764.1	1719.4	1683.1	1648.1	1609.4
36.5°	1691.2	1736.7	1775.8	1818.1	1787.5	1765.7	1748.0	1702.9	1665.8	1630.3	1591.7
37°	1675.1	1720.6	1759.7	1803.2	1771.4	1749.6	1731.5	1686.4	1648.9	1612.6	1573.5
37.5°	1657.7	1704.5	1744.4	1787.5	1754.9	1733.1	1715.0	1669.0	1631.6	1594.9	1555.4
38°	1640.4	1687.6	1727.9	1771.8	1738.7	1716.6	1698.4	1651.7	1614.2	1576.8	1536.5
38.5°	1623.1	1670.6	1711.3	1755.7	1721.4	1699.7	1681.1	1634.4	1595.7	1558.2	1517.1
39°	1605.4	1653.3	1694.4	1739.5	1704.9	1681.9	1663.8	1616.2	1577.6	1539.3	1498.2
39.5°	1588.0	1636.0	1677.5	1722.6	1687.2	1664.6	1646.1	1598.1	1559.4	1519.9	1478.8
40°	1569.9	1618.7	1660.2	1705.7	1669.8	1646.9	1628.3	1580.4	1540.9	1501.0	1459.1
40.5°	1551.4	1600.5	1642.8	1688.4	1651.7	1628.7	1610.2	1561.8	1522.4	1481.7	1440.2
41°	1533.2	1582.4	1624.7	1671.0	1634.0	1610.2	1592.1	1543.3	1503.0	1461.9	1419.6
41.5°	1514.7	1564.3	1606.6	1652.9	1615.8	1592.1	1573.1	1524.0	1484.1	1442.6	1399.9
42°	1495.8	1546.1	1588.4	1635.2	1597.3	1573.5	1554.6	1505.0	1464.7	1422.8	1379.7
42.5°	1476.8	1527.6	1570.3	1617.1	1578.4	1554.6	1536.5	1486.1	1445.4	1403.1	1359.6
43°	1457.9	1508.7	1551.4	1598.9	1559.4	1535.7	1517.1	1466.7	1426.1	1382.5	1338.6
43.5°	1438.9	1489.7	1532.8	1580.0	1540.5	1516.7	1497.4	1447.4	1406.3	1362.4	1318.5

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
45°	1380.5	1432.1	1475.6	1523.6	1482.1	1457.9	1438.9	1387.8	1347.1	1302.3	1258.8
45.5°	1360.8	1412.4	1456.7	1504.2	1462.3	1438.1	1419.2	1368.0	1327.3	1283.0	1239.5
46°	1341.0	1392.6	1436.9	1484.9	1443.0	1418.0	1399.1	1348.3	1307.2	1263.3	1220.5
46.5°	1320.9	1372.9	1417.2	1465.1	1422.8	1398.2	1378.9	1328.1	1287.4	1243.5	1201.2
47°	1301.5	1353.5	1397.4	1445.4	1402.7	1378.9	1359.6	1308.8	1268.5	1224.6	1180.7
47.5°	1282.2	1333.8	1378.1	1425.6	1383.3	1359.6	1340.2	1289.5	1249.2	1204.0	1158.9
48°	1262.9	1314.0	1358.0	1405.5	1364.4	1339.8	1320.9	1270.1	1228.2	1181.9	1135.1
48.5°	1242.7	1294.7	1338.6	1386.2	1344.7	1321.3	1301.1	1249.6	1206.0	1157.7	1108.1
49°	1223.8	1275.3	1318.9	1366.4	1325.3	1301.1	1281.8	1226.6	1182.7	1131.1	1079.5
49.5°	1202.4	1255.2	1299.9	1346.3	1306.0	1281.8	1261.2	1203.2	1156.9	1102.5	1048.5
50°	1180.7	1235.1	1280.2	1326.9	1286.2	1260.0	1238.7	1178.2	1129.1	1072.3	1017.5
50.5°	1156.9	1212.9	1259.6	1307.6	1264.5	1237.5	1215.3	1151.6	1100.1	1042.4	986.4
51°	1129.9	1189.1	1237.5	1287.8	1241.5	1212.5	1189.9	1123.0	1070.2	1010.6	953.8
51.5°	1099.7	1162.5	1213.7	1266.9	1217.3	1183.9	1161.7	1092.0	1037.6	978.4	921.2
52°	1069.0	1134.3	1188.7	1244.3	1189.9	1154.9	1131.5	1059.0	1004.2	945.3	887.7
52.5°	1037.2	1104.1	1160.9	1220.5	1160.1	1125.4	1101.7	1025.1	970.3	911.9	854.7
53°	1004.6	1072.3	1131.9	1195.2	1130.3	1094.0	1069.0	990.5	935.7	876.8	821.2
53.5°	970.7	1039.2	1100.5	1167.8	1098.5	1062.2	1036.4	954.6	900.6	842.2	787.8
54°	937.3	1006.6	1067.4	1137.9	1066.2	1029.9	1002.5	919.1	864.3	807.9	754.7
54.5°	903.0	972.3	1032.4	1106.1	1032.8	997.7	968.3	884.1	828.5	773.3	720.9
55°	868.8	937.7	997.3	1072.3	999.7	964.3	932.8	847.0	791.4	737.4	686.6
55.5°	834.1	901.4	961.4	1037.6	965.5	930.0	897.8	811.5	755.1	702.8	653.6
56°	800.3	865.5	924.8	1001.7	930.8	895.0	862.3	775.3	718.5	668.1	620.1
56.5°	764.8	829.3	887.3	965.5	895.4	859.5	826.5	740.6	682.6	633.4	587.1
57°	730.6	792.2	849.4	928.8	859.5	824.0	790.2	705.6	647.5	599.6	554.9
57.5°	695.9	755.9	812.8	891.7	822.8	788.6	754.7	671.3	612.9	565.7	523.4
58°	660.8	718.9	776.1	855.5	787.0	752.3	719.3	636.7	578.6	532.3	492.0
58.5°	626.6	681.8	738.6	818.8	750.3	715.2	684.2	602.4	544.8	500.1	461.0
59°	592.7	646.3	701.9	782.5	713.6	678.6	648.8	568.2	512.6	467.4	431.2
59.5°	559.3	610.9	666.5	747.1	677.4	641.9	614.1	535.9	481.1	436.4	402.6
60°	525.5	575.8	631.8	711.2	641.1	606.0	579.8	502.9	450.5	405.8	375.1
60.5°	492.4	542.0	597.2	676.2	605.6	570.2	546.0	471.5	420.7	378.8	347.7
61°	461.4	508.5	561.7	640.7	571.0	535.1	513.0	439.6	391.3	351.8	320.3
61.5°	429.5	475.9	528.7	607.7	537.1	500.9	480.3	409.8	363.9	325.2	292.9
62°	399.7	444.1	496.4	572.6	503.3	467.0	447.7	382.0	336.5	298.2	265.5
62.5°	370.7	413.4	465.0	539.6	469.8	433.6	415.8	353.8	308.7	271.2	242.2
63°	342.9	384.0	434.0	506.9	437.6	402.1	387.2	326.0	281.3	248.2	220.0
63.5°	315.5	355.0	403.4	474.7	406.2	372.7	358.2	298.2	253.5	226.9	199.5
64°	289.7	327.6	374.3	442.8	377.2	343.7	329.2	270.4	228.1	206.3	180.5
64.5°	264.7	301.0	346.1	411.4	348.6	314.3	300.6	245.4	203.9	187.0	163.2
65°	240.6	276.0	319.1	381.6	319.9	285.3	271.6	222.0	181.7	169.2	147.9
65.5°	217.6	251.8	293.3	352.6	290.9	259.5	245.4	199.9	160.8	152.7	134.2
66°	195.8	230.1	268.4	324.0	262.3	234.5	221.2	179.3	143.0	138.6	122.9



TEST NUMBER: P776358

CATALOG NUMBER: HCDJBL3040CSD-HCD61TRMW-4000lm-4000K

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
67.5°	141.4	170.9	199.9	244.6	192.2	170.4	158.8	128.5	104.0	104.8	97.9
68°	130.6	153.9	179.7	221.2	171.3	152.3	142.2	116.1	96.7	97.1	92.3
68.5°	120.1	140.2	161.2	198.7	153.5	135.8	127.7	105.6	92.3	90.7	88.2
69°	109.2	129.3	145.1	178.1	136.6	121.7	115.6	97.1	88.6	86.2	84.6
69.5°	98.3	118.9	134.2	158.8	122.5	109.6	105.2	91.1	85.0	82.6	81.4
70°	92.7	108.0	123.3	141.0	110.0	100.3	97.1	86.6	81.0	79.0	77.8
70.5°	88.6	97.5	112.8	129.8	100.7	92.7	91.1	83.0	77.4	75.4	74.5
71°	85.0	90.7	102.4	118.1	93.1	88.2	87.0	79.4	73.3	72.1	71.3
71.5°	81.4	85.8	91.5	106.8	87.8	84.6	83.4	75.8	69.7	68.5	67.7
72°	77.8	82.2	87.0	95.5	84.2	81.0	80.2	72.1	66.1	64.9	64.5
72.5°	73.7	78.6	83.8	89.5	80.6	77.4	76.6	68.5	62.5	61.7	61.2
73°	70.1	74.9	80.2	85.8	77.4	74.1	72.9	64.9	59.2	58.4	58.0
73.5°	66.5	71.3	76.6	82.2	73.7	70.5	69.7	61.7	56.0	55.2	55.2
74°	63.3	67.7	72.9	79.0	70.1	67.3	66.1	58.0	52.8	52.0	52.0
74.5°	59.6	64.5	69.7	75.4	66.9	63.7	62.9	54.8	49.6	48.8	49.2
75°	56.4	60.8	66.1	71.7	63.7	60.4	59.6	51.6	46.7	45.9	46.3
75.5°	53.2	57.6	62.9	68.5	60.4	57.2	56.4	48.8	43.9	43.1	43.5
76°	50.0	54.4	59.2	64.9	57.2	54.4	53.2	45.5	41.1	40.3	41.1
76.5°	47.1	51.2	56.4	61.7	54.0	51.2	50.4	42.7	38.3	37.5	38.3
77°	43.9	48.4	53.2	58.4	51.2	48.4	47.5	39.9	35.5	35.1	35.9
77.5°	41.1	45.1	50.0	55.2	48.4	45.5	44.7	37.1	33.0	32.6	33.4
78°	38.7	42.3	47.1	52.4	45.5	42.7	41.9	34.7	30.6	30.2	31.0
78.5°	35.9	39.5	44.3	49.2	42.7	40.3	39.1	32.2	28.2	27.4	28.6
79°	33.4	37.1	41.5	46.3	39.9	37.5	36.7	29.8	25.8	25.0	26.6
79.5°	31.0	34.3	38.7	43.9	37.5	35.5	34.3	27.4	23.4	23.0	24.2
80°	28.6	31.8	36.3	41.1	35.1	33.0	31.8	25.0	21.4	20.6	21.8
80.5°	26.2	29.4	33.8	38.3	32.6	30.6	29.4	22.6	19.3	18.5	19.7
81°	24.2	27.0	31.4	35.9	30.2	28.2	27.0	20.6	17.3	16.5	18.1
81.5°	22.2	25.0	29.0	33.4	27.8	26.2	24.6	18.1	15.3	14.5	16.1
82°	19.7	22.6	26.6	31.0	25.4	23.8	22.6	16.5	13.7	12.5	14.1
82.5°	17.7	20.6	24.6	29.0	23.4	21.8	20.6	14.5	11.7	10.9	12.5
83°	16.1	18.5	22.6	26.6	21.4	19.7	18.5	12.5	10.1	9.3	10.9
83.5°	14.1	16.9	20.6	24.6	19.7	17.7	16.5	10.9	8.5	7.7	9.3
84°	12.5	14.9	18.5	22.6	17.7	16.1	14.9	9.3	6.9	6.0	7.7
84.5°	10.9	13.3	16.5	20.6	15.7	14.1	12.9	7.7	5.6	4.8	6.4
85°	8.9	11.3	14.9	18.5	14.1	12.5	11.3	6.4	4.4	4.0	5.2
85.5°	7.3	9.7	12.9	16.5	12.5	10.9	9.7	5.2	3.2	3.2	4.0
86°	6.0	8.1	11.3	14.9	10.9	9.3	8.5	4.4	2.8	2.4	2.8
86.5°	4.4	6.4	10.1	13.3	9.3	7.7	6.9	3.2	2.0	1.6	1.6
87°	3.6	5.2	8.5	11.7	7.7	6.4	5.6	2.4	1.2	0.8	0.8
87.5°	2.8	4.4	7.3	10.1	6.0	4.8	4.4	1.6	0.8	0.4	0.0
88°	2.0	3.6	5.6	8.5	4.8	3.6	3.2	0.8	0.4	0.0	0.0
88.5°	1.2	2.4	4.4	6.9	3.6	2.4	2.0	0.4	0.0	0.0	0.0



TEST NUMBER: P776358

CATALOG NUMBER: HCDJBL3040CSD-HCD61TRMW-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	1.2	2.8	0.4	0.0	0.0	0.0	0.0	0.0	0.0



TEST NUMBER: P776358

CATALOG NUMBER: HCDJBL3040CSD-HCD61TRMW-4000lm-4000K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
0°	2229.9	2229.9	2229.9	2229.9	2229.9	2229.9
0.5°	2224.3	2229.1	2229.9	2229.9	2231.2	2231.2
1°	2222.3	2227.5	2228.3	2228.7	2230.7	2231.2
1.5°	2219.9	2225.5	2226.7	2227.5	2229.9	2231.2
2°	2217.5	2223.5	2225.1	2225.9	2229.1	2230.7
2.5°	2215.0	2221.1	2223.1	2224.3	2227.9	2229.9
3°	2212.2	2218.7	2221.1	2222.7	2226.7	2229.5
3.5°	2209.4	2216.2	2218.7	2220.3	2225.5	2228.3
4°	2206.6	2213.4	2216.2	2218.3	2223.5	2227.5
4.5°	2203.3	2210.6	2213.4	2215.8	2221.9	2225.9
5°	2199.7	2207.4	2210.2	2213.0	2219.9	2224.7
5.5°	2196.1	2204.2	2207.4	2210.2	2217.9	2223.1
6°	2192.1	2200.5	2204.2	2207.4	2215.4	2221.5
6.5°	2188.0	2196.9	2200.9	2204.2	2213.0	2219.5
7°	2184.0	2192.9	2197.3	2200.9	2210.2	2217.5
7.5°	2179.6	2188.8	2193.3	2197.3	2207.4	2215.0
8°	2175.1	2184.8	2189.2	2193.7	2204.6	2212.6
8.5°	2170.3	2180.4	2185.2	2189.6	2201.3	2209.8
9°	2165.5	2175.9	2180.8	2185.6	2197.7	2207.0
9.5°	2160.6	2171.1	2176.3	2181.2	2194.1	2203.8
10°	2155.0	2165.9	2171.5	2176.8	2190.1	2200.9
10.5°	2149.8	2161.0	2166.7	2171.9	2186.0	2197.3
11°	2143.7	2155.4	2161.4	2167.1	2181.6	2193.7
11.5°	2138.1	2149.8	2155.8	2161.8	2177.6	2189.6
12°	2132.0	2144.1	2150.2	2156.6	2173.1	2185.6
12.5°	2125.6	2138.1	2144.5	2151.0	2167.9	2181.2
13°	2118.7	2131.6	2138.5	2145.3	2163.1	2176.8
13.5°	2112.3	2125.2	2132.0	2139.3	2157.4	2171.9
14°	2105.4	2118.7	2125.6	2133.2	2151.8	2167.1
14.5°	2098.2	2111.9	2118.7	2126.4	2146.1	2162.2
15°	2090.9	2104.6	2112.3	2120.3	2140.5	2157.0
15.5°	2083.3	2097.4	2105.0	2113.1	2134.0	2151.4
16°	2075.6	2089.7	2097.8	2105.8	2127.6	2145.7
16.5°	2067.6	2082.1	2089.7	2098.6	2120.7	2139.7
17°	2059.1	2074.0	2082.1	2090.9	2113.9	2133.2
17.5°	2051.0	2065.5	2074.0	2083.3	2107.0	2126.8
18°	2042.2	2057.5	2065.5	2075.2	2099.8	2120.3
18.5°	2033.3	2048.2	2057.1	2066.7	2092.1	2113.5
19°	2024.0	2039.7	2048.2	2058.3	2084.1	2106.2
19.5°	2014.4	2030.5	2039.3	2049.4	2076.0	2099.0
20°	2004.7	2020.8	2030.1	2040.6	2068.0	2091.3
20.5°	1995.0	2011.5	2020.0	2031.3	2059.5	2083.7
21°	1984.9	2001.1	2010.3	2021.6	2050.6	2075.6

TEST NUMBER: P776358

CATALOG NUMBER: HCDJBL3040CSD-HCD61TRMW-4000lm-4000K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
22.5°	1952.7	1969.6	1979.7	1991.4	2022.8	2049.4
23°	1941.8	1959.2	1968.4	1980.5	2013.2	2040.6
23.5°	1930.1	1947.9	1957.5	1969.6	2003.1	2031.3
24°	1918.5	1936.2	1946.3	1958.4	1993.0	2021.6
24.5°	1906.8	1924.5	1934.6	1947.1	1982.5	2011.9
25°	1894.3	1912.4	1922.5	1935.8	1971.2	2001.5
25.5°	1881.8	1900.3	1910.0	1923.7	1960.0	1991.0
26°	1869.3	1887.4	1897.9	1911.6	1948.7	1980.1
26.5°	1856.0	1874.9	1885.0	1898.7	1937.0	1969.6
27°	1842.7	1861.6	1872.1	1885.8	1924.9	1957.9
27.5°	1829.4	1848.3	1858.4	1873.3	1912.8	1946.7
28°	1815.7	1834.6	1845.1	1860.0	1900.3	1934.6
28.5°	1801.2	1820.5	1831.4	1846.3	1887.4	1922.9
29°	1786.7	1806.4	1816.9	1832.2	1874.5	1910.4
29.5°	1772.2	1791.9	1802.8	1818.5	1860.8	1897.5
30°	1756.9	1777.8	1787.9	1803.6	1847.1	1884.6
30.5°	1742.0	1762.5	1773.0	1789.5	1833.4	1871.7
31°	1726.3	1747.2	1758.1	1774.2	1819.3	1858.0
31.5°	1710.1	1732.3	1743.2	1759.3	1804.8	1844.3
32°	1694.0	1716.6	1727.5	1743.6	1789.9	1830.2
32.5°	1677.9	1700.5	1711.3	1728.3	1775.0	1815.7
33°	1661.0	1684.7	1696.0	1712.6	1759.7	1801.2
33.5°	1644.0	1668.6	1679.9	1696.4	1744.0	1786.3
34°	1627.1	1651.7	1663.4	1679.9	1728.3	1771.0
34.5°	1609.4	1634.8	1646.5	1663.8	1712.1	1756.1
35°	1592.1	1617.9	1629.9	1646.5	1696.0	1740.0
35.5°	1573.9	1600.5	1613.0	1629.5	1679.5	1724.2
36°	1556.2	1583.2	1595.7	1612.2	1662.6	1707.3
36.5°	1537.7	1565.9	1578.8	1594.9	1645.7	1691.2
37°	1519.5	1548.1	1561.0	1577.6	1627.9	1675.1
37.5°	1500.6	1530.0	1543.3	1559.8	1611.0	1657.7
38°	1482.1	1511.9	1525.6	1541.7	1593.3	1640.4
38.5°	1462.3	1494.2	1507.4	1523.2	1575.5	1623.1
39°	1443.8	1475.2	1489.7	1505.4	1557.0	1605.4
39.5°	1424.0	1456.7	1471.6	1487.3	1538.9	1588.0
40°	1404.7	1438.5	1453.0	1468.8	1520.7	1569.9
40.5°	1385.4	1420.0	1434.5	1449.8	1502.2	1551.4
41°	1365.6	1400.7	1415.6	1431.3	1483.7	1533.2
41.5°	1345.5	1381.7	1397.0	1412.4	1464.3	1514.7
42°	1325.7	1362.8	1378.1	1393.4	1445.8	1495.8
42.5°	1305.6	1343.8	1359.2	1374.5	1426.5	1476.8
43°	1286.2	1324.9	1340.2	1355.5	1407.5	1457.9
43.5°	1266.1	1305.2	1321.3	1335.8	1388.2	1438.9

TEST NUMBER: P776358

CATALOG NUMBER: HCDJBL3040CSD-HCD61TRMW-4000lm-4000K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
45°	1209.3	1247.5	1263.7	1277.8	1329.7	1380.5
45.5°	1190.3	1228.6	1244.3	1258.4	1309.6	1360.8
46°	1170.2	1209.3	1225.4	1239.5	1290.3	1341.0
46.5°	1149.2	1190.3	1206.0	1219.7	1270.5	1320.9
47°	1126.7	1171.0	1187.5	1200.8	1251.6	1301.5
47.5°	1100.9	1149.6	1167.8	1181.5	1232.2	1282.2
48°	1072.7	1128.3	1146.4	1160.5	1212.9	1262.9
48.5°	1042.0	1104.1	1124.2	1138.7	1193.1	1242.7
49°	1010.6	1077.1	1101.7	1116.6	1172.2	1223.8
49.5°	978.8	1047.7	1073.9	1090.8	1150.8	1202.4
50°	946.9	1016.2	1044.9	1062.2	1127.5	1180.7
50.5°	913.5	983.6	1012.2	1030.8	1100.9	1156.9
51°	880.0	951.0	980.0	998.5	1071.0	1129.9
51.5°	846.6	917.1	945.7	965.5	1039.2	1099.7
52°	812.8	883.7	912.7	931.6	1007.0	1069.0
52.5°	779.7	849.0	878.8	897.4	974.3	1037.2
53°	745.9	813.6	843.8	863.1	941.7	1004.6
53.5°	713.2	779.3	807.5	827.7	907.9	970.7
54°	680.2	744.7	773.3	793.0	874.0	937.3
54.5°	647.1	711.6	738.2	758.4	839.8	903.0
55°	614.9	677.4	702.8	725.3	805.1	868.8
55.5°	582.7	643.9	668.9	691.1	770.8	834.1
56°	551.6	611.3	635.1	657.6	736.6	800.3
56.5°	521.8	578.6	601.6	625.0	702.8	764.8
57°	490.8	546.8	569.0	593.1	668.9	730.6
57.5°	461.0	515.8	536.7	560.1	635.9	695.9
58°	431.2	484.8	505.3	528.7	602.8	660.8
58.5°	403.8	455.3	475.9	498.9	570.2	626.6
59°	376.8	426.7	446.9	468.6	539.2	592.7
59.5°	350.2	398.5	419.1	439.6	508.1	559.3
60°	323.2	371.9	391.7	411.4	477.9	525.5
60.5°	296.6	344.9	365.5	383.6	448.5	492.4
61°	269.6	319.5	340.1	357.0	418.7	461.4
61.5°	246.2	295.8	316.3	330.8	390.1	429.5
62°	223.6	273.2	292.9	306.6	362.3	399.7
62.5°	203.1	251.0	270.8	282.9	335.3	370.7
63°	183.7	230.5	249.8	259.9	309.1	342.9
63.5°	166.8	211.1	230.1	239.0	284.5	315.5
64°	150.7	193.0	211.6	218.8	260.3	289.7
64.5°	137.0	176.1	193.4	200.3	236.9	264.7
65°	125.7	160.8	177.3	182.5	215.2	240.6
65.5°	115.6	146.3	162.0	166.4	195.0	217.6
66°	107.2	136.2	147.9	151.5	176.9	195.8



TEST NUMBER: P776358

CATALOG NUMBER: HCDJBL3040CSD-HCD61TRMW-4000lm-4000K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
67.5°	89.1	106.4	117.3	117.3	135.4	141.4
68°	85.8	96.3	107.2	110.4	126.1	130.6
68.5°	82.2	90.7	97.1	103.2	116.5	120.1
69°	79.0	87.0	91.1	95.9	107.2	109.2
69.5°	75.8	83.8	87.0	88.6	97.5	98.3
70°	72.5	80.6	83.8	85.4	91.5	92.7
70.5°	69.3	77.0	80.6	81.8	87.0	88.6
71°	66.1	73.7	77.4	78.6	83.4	85.0
71.5°	62.9	70.5	74.1	75.4	79.8	81.4
72°	59.6	67.3	70.5	72.1	76.2	77.8
72.5°	56.8	64.1	67.3	68.9	72.9	73.7
73°	54.0	60.8	64.1	65.7	69.3	70.1
73.5°	50.8	58.0	61.2	62.5	66.1	66.5
74°	48.0	54.8	58.0	59.2	62.5	63.3
74.5°	45.5	52.0	55.2	56.0	59.2	59.6
75°	42.7	49.2	52.4	53.2	56.0	56.4
75.5°	40.3	46.3	49.6	50.4	52.8	53.2
76°	37.5	43.9	46.7	47.5	50.0	50.0
76.5°	35.1	41.1	43.9	44.7	46.7	47.1
77°	33.0	38.7	41.5	41.9	43.9	43.9
77.5°	30.6	36.3	38.7	39.1	41.1	41.1
78°	28.6	33.8	36.3	36.7	38.3	38.7
78.5°	26.2	31.4	33.8	34.3	35.9	35.9
79°	24.2	29.4	31.4	31.8	33.4	33.4
79.5°	22.2	27.0	29.4	29.4	30.6	31.0
80°	20.1	25.0	27.0	27.4	28.6	28.6
80.5°	18.1	23.0	25.0	25.0	26.2	26.2
81°	16.5	21.0	23.0	23.0	23.8	24.2
81.5°	14.5	18.9	21.0	21.0	21.8	22.2
82°	12.9	17.3	18.9	18.9	19.7	19.7
82.5°	11.3	15.3	17.3	17.3	17.7	17.7
83°	9.7	13.7	15.3	15.3	15.7	16.1
83.5°	8.1	12.1	13.7	13.7	13.7	14.1
84°	6.4	10.5	12.1	12.1	12.1	12.5
84.5°	4.8	8.9	10.5	10.5	10.5	10.9
85°	3.6	7.3	8.9	8.9	8.5	8.9
85.5°	2.4	5.6	7.3	7.3	7.3	7.3
86°	1.2	4.0	5.6	6.0	6.0	6.0
86.5°	0.4	2.8	4.4	4.4	4.8	4.4
87°	0.0	1.6	2.8	3.2	3.6	3.6
87.5°	0.0	0.8	1.6	2.0	2.8	2.8
88°	0.0	0.0	0.8	0.8	2.0	2.0
88.5°	0.0	0.0	0.0	0.4	1.2	1.2



TEST NUMBER: P776358

CATALOG NUMBER: HCDJBL3040CSD-HCD61TRMW-4000lm-4000K

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

Scaled Data Report



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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°	2067.1	2091.7	2112.7	2133.6	2122.0	2110.3	2098.6	2072.8	2051.0	2028.5	2005.1
22°	2058.3	2084.1	2105.4	2127.2	2115.1	2103.4	2090.9	2064.3	2042.2	2019.6	1995.4



44°	1420.0	1470.8	1514.3	1561.8	1521.1	1497.0	1478.0	1427.7	1386.6	1342.2	1298.3
44.5°	1399.9	1451.0	1494.6	1542.9	1501.4	1478.0	1458.3	1407.9	1366.4	1322.5	1278.6



66.5°	176.1	208.7	244.6	297.4	237.3	212.0	198.3	160.8	127.3	125.7	113.2
67°	158.4	189.0	221.6	270.0	213.6	190.2	177.7	143.5	114.4	114.4	104.8



89°	0.8	1.6	3.2	5.6	2.4	1.2	0.8	0.0	0.0	0.0	0.0
89.5°	0.4	0.8	2.0	4.0	1.2	0.4	0.4	0.0	0.0	0.0	0.0

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21.5°	1974.5	1991.0	2000.3	2011.5	2041.8	2067.1
22°	1963.6	1980.9	1990.2	2001.5	2032.5	2058.3



44°	1247.1	1285.8	1301.9	1316.9	1368.8	1420.0
44.5°	1228.2	1266.5	1282.6	1297.1	1349.1	1399.9



66.5°	99.9	126.1	137.8	137.8	160.0	176.1
67°	93.9	116.1	127.3	126.1	145.1	158.4

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

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Scaled Data Report



(END OF REPORT)