

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: P776359

Luminaire Tested: HCDJBL3040CSD-HCD61TRMW-4000lm-5000K

Issue Date: 2/13/2024

Test Information

Test Method: LM-79-2019
Report Number: P776359
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: HCDJBS3040CSD-HCD61TRMW-4000lm-5000K
Description: 6 INCH ROUND SHALLOW-WIDE MATTE WHITE TRIM
Light Source: SELECTABLE LUMENS AND CCT ARRAY 90CRI / 5000K CCT
Ballast/Driver: -

Summary

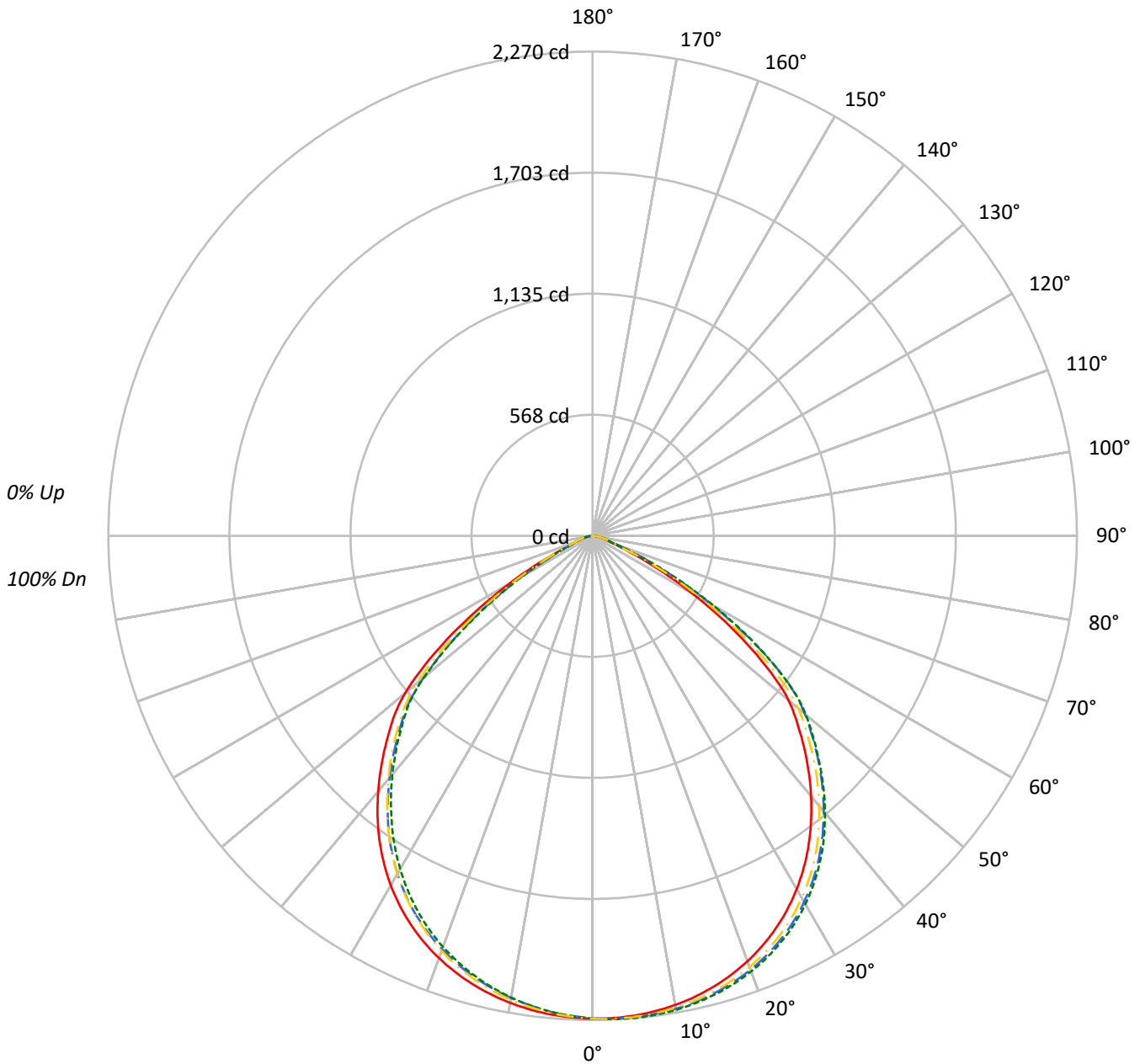
Lumens per Lamp: N/A
Luminaire Lumens: 4994.0 lumens
Efficiency: N/A
Efficacy: 129.7 lumens/watt
Spacing Criteria (0/90/45): 1.24 / 1.24 / 1.32
Luminous Opening: Circular (Dia: 0.5' x H: 0')
CIE Type: Direct

Input Watts (W): 38.5
Input Voltage (V): NR
Input Current (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					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								
1	111	107	104	101	109	105	102	99	101	99	96	97	95	93	94	92	91	89								
2	103	96	91	86	100	94	89	85	91	87	83	88	84	81	85	82	79	77								
3	95	86	79	74	93	85	78	73	82	76	72	79	74	71	77	73	69	67								
4	88	77	70	64	86	76	69	63	74	67	63	71	66	62	69	65	61	59								
5	81	70	62	56	79	69	61	56	67	60	55	65	59	55	63	58	54	52								
6	75	63	55	49	74	62	55	49	61	54	49	59	53	48	58	52	48	46								
7	70	58	50	44	68	57	49	44	55	49	44	54	48	43	53	47	43	41								
8	65	53	45	40	64	52	45	39	51	44	39	50	44	39	49	43	39	37								
9	61	49	41	36	60	48	41	36	47	40	36	46	40	35	45	39	35	34								
10	57	45	38	33	56	44	37	33	44	37	32	43	37	32	42	36	32	30								

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°	270°
0°	124058	124058	124058	124058
5°	124235	124868	123965	123272
10°	124330	125627	123784	122348
15°	124229	126295	123491	121215
20°	123812	126793	122907	119635
25°	122856	126890	121791	117388
30°	121063	126241	119797	114207
35°	118166	124490	116580	109874
40°	114014	121270	111903	104467
45°	108616	116601	105980	98150
50°	102180	111323	97720	87954
55°	84260	96962	76757	65699
60°	58460	71332	50128	41378
65°	31664	42119	23920	21170
70°	15083	17888	13175	13111
75°	12115	13683	10040	10569
80°	9155	11239	6851	8019
85°	5661	8995	2830	4655

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 67.5°

Vertical Angle: 45°

Luminance: 119865 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	214.3	4.3
10°-20°	615.3	12.3
20°-30°	929.9	18.6
30°-40°	1093.6	21.9
40°-50°	1065.0	21.3
50°-60°	751.2	15.0
60°-70°	251.7	5.0
70°-80°	60.8	1.2
80°-90°	12.1	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°	1759.5	35.2
0°-40°	2853.2	57.1
0°-60°	4669.4	93.5
0°-90°	4994.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4994.0	100.0

CANDELA DISTRIBUTION:

	0°	90°	180°	270°	360°	Flux
0°	2263	2263	2263	2263	2263	
5°	2258	2269	2253	2240	2258	215
15°	2189	2225	2176	2136	2189	618
25°	2031	2098	2014	1941	2031	935
35°	1766	1860	1742	1642	1766	1102
45°	1401	1504	1367	1266	1401	1079
55°	882	1014	803	687	882	781
65°	244	325	184	163	244	262
75°	57	65	47	50	57	62
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°	2263.0	2263.0	2263.0	2263.0	2263.0	2263.0	2263.0	2263.0	2263.0	2263.0	2263.0
0.5°	2264.2	2263.8	2262.6	2260.5	2265.0	2265.4	2265.0	2265.0	2263.8	2262.1	2260.1
1°	2264.2	2264.2	2263.8	2262.1	2266.2	2266.2	2265.8	2265.0	2263.4	2261.3	2258.5
1.5°	2264.2	2264.6	2264.2	2263.4	2267.1	2267.1	2266.2	2264.6	2262.1	2259.7	2256.8
2°	2263.8	2264.6	2265.0	2264.6	2267.9	2267.5	2266.2	2264.2	2261.3	2258.5	2254.8
2.5°	2263.0	2264.6	2265.4	2265.4	2268.7	2267.5	2266.2	2263.8	2260.5	2256.8	2253.1
3°	2262.6	2264.6	2265.8	2266.2	2268.7	2267.9	2266.2	2263.0	2258.9	2255.2	2250.7
3.5°	2261.3	2264.6	2266.2	2267.1	2269.1	2267.9	2265.8	2262.1	2257.6	2253.1	2248.2
4°	2260.5	2263.8	2265.8	2267.5	2269.1	2267.9	2265.4	2261.3	2256.4	2251.1	2245.8
4.5°	2258.9	2263.0	2265.8	2267.9	2269.5	2267.5	2265.0	2259.7	2254.4	2248.7	2242.5
5°	2257.6	2262.1	2265.4	2267.9	2269.1	2267.1	2263.8	2258.5	2252.7	2246.2	2240.1
5.5°	2256.0	2261.3	2264.6	2267.5	2268.7	2266.2	2263.0	2256.8	2250.7	2243.7	2236.8
6°	2254.4	2259.7	2264.2	2267.5	2267.9	2265.4	2262.1	2255.2	2248.2	2240.9	2233.5
6.5°	2252.3	2258.5	2263.0	2267.1	2267.1	2264.6	2260.5	2253.1	2245.8	2237.6	2229.8
7°	2250.3	2256.8	2261.7	2266.2	2266.2	2263.0	2259.3	2251.1	2243.3	2234.7	2226.2
7.5°	2247.8	2255.2	2260.5	2265.4	2265.0	2261.7	2257.6	2248.7	2240.5	2231.5	2222.1
8°	2245.4	2253.1	2258.9	2264.6	2263.8	2260.1	2255.6	2246.2	2237.6	2227.8	2218.4
8.5°	2242.5	2251.1	2257.6	2263.8	2262.1	2258.5	2253.1	2243.7	2234.3	2224.1	2213.9
9°	2239.7	2248.7	2255.6	2262.1	2260.5	2256.4	2251.1	2240.9	2231.1	2220.0	2209.8
9.5°	2236.4	2246.2	2253.6	2260.5	2258.9	2254.4	2249.1	2238.0	2227.4	2215.9	2204.9
10°	2233.5	2243.3	2251.5	2258.9	2256.8	2251.9	2246.2	2234.3	2223.7	2211.8	2200.4
10.5°	2229.8	2240.5	2249.1	2257.2	2254.4	2249.1	2243.3	2231.1	2219.6	2207.3	2195.1
11°	2226.2	2237.2	2246.2	2254.8	2251.9	2246.6	2240.5	2227.4	2215.5	2202.9	2190.2
11.5°	2222.1	2233.9	2243.7	2252.7	2249.1	2243.3	2237.2	2223.7	2211.4	2197.9	2184.9
12°	2218.0	2230.2	2240.5	2250.3	2246.2	2240.5	2233.9	2219.6	2206.9	2193.0	2179.5
12.5°	2213.5	2226.6	2237.2	2247.4	2243.3	2237.2	2230.2	2215.5	2202.0	2187.7	2173.8
13°	2209.0	2222.5	2233.9	2244.6	2240.1	2233.9	2226.6	2211.0	2197.1	2182.4	2167.7
13.5°	2204.1	2218.8	2230.2	2241.7	2236.8	2229.8	2222.5	2206.5	2192.2	2176.7	2161.6
14°	2199.2	2214.3	2226.6	2238.4	2233.1	2226.2	2218.4	2201.6	2186.9	2171.0	2155.4
14.5°	2194.3	2209.8	2222.5	2235.2	2229.0	2222.1	2213.9	2196.7	2181.2	2164.8	2148.5
15°	2188.9	2204.9	2218.4	2231.1	2225.3	2218.0	2209.4	2191.4	2175.9	2159.1	2141.9
15.5°	2183.2	2200.0	2213.9	2227.4	2221.3	2213.1	2204.5	2186.1	2169.7	2152.6	2135.0
16°	2177.5	2194.7	2209.4	2223.3	2216.8	2208.6	2199.2	2180.4	2164.0	2146.0	2128.0
16.5°	2171.4	2189.4	2204.1	2219.6	2211.8	2203.7	2194.3	2174.6	2157.5	2139.1	2120.7
17°	2164.8	2183.6	2199.6	2214.7	2207.3	2198.4	2188.9	2168.5	2150.9	2132.1	2112.9
17.5°	2158.3	2177.9	2194.3	2210.2	2202.0	2193.0	2183.2	2162.0	2144.0	2124.7	2105.1
18°	2151.7	2171.8	2188.9	2205.3	2196.7	2187.7	2177.1	2155.4	2137.0	2117.4	2097.4
18.5°	2144.8	2165.6	2183.2	2200.0	2191.0	2181.6	2171.0	2148.9	2130.1	2109.6	2088.8
19°	2137.4	2159.1	2177.1	2194.7	2185.7	2175.9	2164.8	2141.9	2122.3	2101.8	2080.6
19.5°	2130.1	2152.1	2171.0	2189.4	2179.5	2169.3	2158.3	2134.6	2114.5	2093.7	2072.0
20°	2122.3	2145.2	2164.4	2183.6	2173.4	2162.8	2151.7	2127.2	2106.8	2085.1	2063.0
20.5°	2114.5	2138.2	2158.3	2177.5	2166.9	2155.8	2144.4	2119.4	2098.6	2076.5	2053.6
21°	2106.3	2130.5	2151.3	2171.4	2160.3	2148.9	2137.0	2111.3	2090.4	2067.9	2044.6



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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°	2079.8	2106.8	2129.2	2151.7	2138.7	2126.4	2113.7	2086.3	2063.4	2039.7	2015.2
23°	2070.8	2098.6	2121.5	2144.4	2130.9	2118.6	2105.5	2077.3	2053.6	2029.9	2004.1
23.5°	2061.4	2089.6	2113.3	2137.0	2123.1	2110.4	2096.9	2067.9	2044.2	2019.7	1993.9
24°	2051.6	2080.6	2104.7	2129.7	2114.9	2101.8	2087.9	2058.5	2034.0	2009.4	1982.9
24.5°	2041.7	2071.2	2096.1	2121.5	2106.3	2092.9	2078.9	2048.7	2023.7	1998.4	1971.8
25°	2031.1	2061.4	2087.1	2113.3	2097.8	2083.9	2070.0	2038.9	2013.5	1987.8	1960.4
25.5°	2020.5	2051.6	2078.1	2104.7	2088.8	2074.5	2060.1	2028.2	2002.5	1976.7	1948.1
26°	2009.4	2041.3	2068.3	2096.1	2079.4	2065.0	2050.3	2017.6	1991.4	1965.3	1936.2
26.5°	1998.8	2031.1	2058.9	2087.1	2070.0	2054.8	2040.5	2007.0	1980.0	1953.0	1924.0
27°	1986.9	2020.1	2048.7	2077.7	2060.1	2045.0	2029.9	1995.5	1968.5	1941.6	1911.3
27.5°	1975.5	2009.4	2038.5	2068.3	2049.9	2034.4	2018.8	1984.1	1956.7	1929.3	1898.6
28°	1963.2	1998.4	2028.2	2058.5	2039.3	2023.3	2008.2	1972.6	1944.4	1916.2	1885.1
28.5°	1951.4	1986.5	2017.2	2048.7	2028.7	2012.3	1996.8	1960.8	1931.7	1903.5	1872.0
29°	1938.7	1974.7	2006.2	2038.1	2017.6	2000.8	1984.9	1948.5	1919.1	1890.0	1858.1
29.5°	1925.6	1962.8	1994.3	2027.4	2006.2	1989.0	1973.0	1935.8	1905.6	1876.5	1844.2
30°	1912.5	1950.1	1982.9	2016.4	1994.3	1977.5	1961.2	1922.7	1892.5	1862.6	1829.5
30.5°	1899.4	1937.5	1971.0	2004.9	1982.4	1964.9	1948.1	1909.7	1878.6	1848.3	1814.8
31°	1885.5	1924.8	1958.3	1993.9	1970.2	1952.2	1935.4	1896.2	1864.7	1834.0	1800.1
31.5°	1871.6	1911.3	1945.6	1981.6	1957.5	1939.1	1922.7	1882.3	1850.4	1819.3	1784.5
32°	1857.3	1897.4	1932.6	1969.4	1944.8	1926.0	1908.8	1867.9	1835.6	1804.2	1769.0
32.5°	1842.6	1883.9	1919.5	1956.7	1931.3	1912.5	1894.9	1853.6	1820.9	1788.6	1752.6
33°	1827.9	1869.6	1905.6	1944.0	1917.8	1898.2	1881.0	1839.3	1805.8	1773.1	1736.7
33.5°	1812.7	1854.9	1891.7	1930.5	1903.9	1883.9	1866.7	1824.2	1789.8	1756.7	1720.7
34°	1797.2	1840.5	1877.8	1917.4	1890.0	1869.6	1852.0	1808.7	1773.9	1740.4	1703.6
34.5°	1782.1	1825.4	1863.0	1903.5	1875.3	1854.9	1836.9	1793.1	1757.9	1724.0	1686.8
35°	1765.7	1810.3	1848.3	1889.2	1860.2	1839.7	1821.7	1777.6	1742.0	1707.2	1669.2
35.5°	1749.8	1794.3	1833.2	1874.9	1845.0	1824.6	1805.8	1761.2	1725.2	1689.7	1651.6
36°	1732.6	1778.4	1817.6	1860.2	1829.9	1808.2	1790.3	1744.9	1708.1	1672.5	1633.2
36.5°	1716.2	1762.4	1802.1	1845.0	1814.0	1791.9	1773.9	1728.1	1690.5	1654.5	1615.2
37°	1699.9	1746.1	1785.8	1829.9	1797.6	1775.5	1757.1	1711.3	1673.3	1636.5	1596.8
37.5°	1682.3	1729.7	1770.2	1814.0	1780.8	1758.8	1740.4	1693.7	1655.7	1618.5	1578.4
38°	1664.7	1712.6	1753.4	1798.0	1764.5	1742.0	1723.6	1676.2	1638.1	1600.1	1559.2
38.5°	1647.1	1695.4	1736.7	1781.7	1746.9	1724.8	1706.0	1658.6	1619.3	1581.3	1539.6
39°	1629.1	1677.8	1719.5	1765.3	1730.1	1706.8	1688.4	1640.2	1600.9	1562.1	1520.4
39.5°	1611.6	1660.2	1702.3	1748.1	1712.1	1689.2	1670.4	1621.8	1582.5	1542.4	1500.7
40°	1593.2	1642.6	1684.7	1731.0	1694.6	1671.3	1652.4	1603.8	1563.7	1523.2	1480.7
40.5°	1574.3	1624.2	1667.2	1713.4	1676.2	1652.9	1634.0	1585.0	1544.9	1503.6	1461.5
41°	1555.9	1605.8	1648.8	1695.8	1658.2	1634.0	1615.6	1566.2	1525.3	1483.6	1440.6
41.5°	1537.1	1587.4	1630.4	1677.4	1639.8	1615.6	1596.4	1546.5	1506.1	1463.9	1420.6
42°	1517.9	1569.0	1612.0	1659.4	1621.0	1596.8	1577.6	1527.3	1486.4	1443.9	1400.1
42.5°	1498.7	1550.2	1593.6	1641.0	1601.7	1577.6	1559.2	1508.1	1466.8	1423.9	1379.7
43°	1479.5	1531.0	1574.3	1622.6	1582.5	1558.4	1539.6	1488.5	1447.2	1403.0	1358.4
43.5°	1460.3	1511.8	1555.5	1603.4	1563.3	1539.2	1519.5	1468.8	1427.1	1382.6	1338.0

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
45°	1401.0	1453.3	1497.5	1546.1	1504.0	1479.5	1460.3	1408.3	1367.0	1321.6	1277.5
45.5°	1380.9	1433.3	1478.2	1526.5	1484.0	1459.4	1440.2	1388.3	1347.0	1302.0	1257.8
46°	1360.9	1413.2	1458.2	1506.9	1464.3	1439.0	1419.8	1368.2	1326.5	1282.0	1238.6
46.5°	1340.4	1393.2	1438.2	1486.8	1443.9	1419.0	1399.3	1347.8	1306.5	1261.9	1219.0
47°	1320.8	1373.6	1418.1	1466.8	1423.5	1399.3	1379.7	1328.2	1287.3	1242.7	1198.1
47.5°	1301.2	1353.5	1398.5	1446.8	1403.8	1379.7	1360.1	1308.5	1267.7	1221.9	1176.1
48°	1281.6	1333.5	1378.1	1426.3	1384.6	1359.7	1340.4	1288.9	1246.4	1199.4	1151.9
48.5°	1261.1	1313.9	1358.4	1406.7	1364.6	1340.8	1320.4	1268.1	1223.9	1174.8	1124.5
49°	1241.9	1294.2	1338.4	1386.6	1344.9	1320.4	1300.8	1244.8	1200.2	1147.8	1095.5
49.5°	1220.2	1273.8	1319.2	1366.2	1325.3	1300.8	1279.9	1221.0	1174.0	1118.8	1064.0
50°	1198.1	1253.3	1299.1	1346.6	1305.3	1278.7	1257.0	1195.7	1145.8	1088.1	1032.5
50.5°	1174.0	1230.8	1278.3	1326.9	1283.2	1255.8	1233.3	1168.7	1116.4	1057.9	1001.0
51°	1146.6	1206.7	1255.8	1306.9	1259.9	1230.4	1207.5	1139.7	1086.1	1025.6	967.9
51.5°	1115.9	1179.7	1231.7	1285.6	1235.3	1201.4	1178.9	1108.2	1053.0	992.9	934.8
52°	1084.9	1151.1	1206.3	1262.7	1207.5	1172.0	1148.2	1074.6	1019.0	959.3	900.9
52.5°	1052.6	1120.4	1178.1	1238.6	1177.3	1142.1	1118.0	1040.3	984.7	925.4	867.3
53°	1019.4	1088.1	1148.7	1212.9	1147.0	1110.2	1084.9	1005.1	949.5	889.8	833.4
53.5°	985.1	1054.6	1116.8	1185.0	1114.7	1077.9	1051.7	968.7	913.9	854.6	799.4
54°	951.1	1021.5	1083.2	1154.8	1082.0	1045.2	1017.4	932.7	877.1	819.9	765.9
54.5°	916.4	986.7	1047.7	1122.5	1048.1	1012.5	982.6	897.2	840.7	784.7	731.6
55°	881.6	951.6	1012.1	1088.1	1014.5	978.5	946.6	859.5	803.1	748.3	696.8
55.5°	846.5	914.8	975.7	1053.0	979.8	943.8	911.1	823.6	766.3	713.2	663.3
56°	812.1	878.4	938.5	1016.6	944.6	908.2	875.1	786.8	729.1	678.0	629.3
56.5°	776.1	841.6	900.4	979.8	908.6	872.2	838.7	751.6	692.7	642.8	595.8
57°	741.4	803.9	862.0	942.6	872.2	836.2	801.9	716.0	657.1	608.5	563.1
57.5°	706.2	767.1	824.8	904.9	835.0	800.3	765.9	681.3	622.0	574.1	531.2
58°	670.6	729.5	787.6	868.1	798.6	763.5	729.9	646.1	587.2	540.2	499.3
58.5°	635.9	691.9	749.6	830.9	761.4	725.8	694.3	611.3	552.9	507.5	467.8
59°	601.5	655.9	712.3	794.1	724.2	688.6	658.4	576.6	520.1	474.3	437.5
59.5°	567.6	619.9	676.4	758.1	687.4	651.4	623.2	543.9	488.3	442.9	408.5
60°	533.2	584.3	641.2	721.7	650.6	615.0	588.4	510.3	457.2	411.8	380.7
60.5°	499.7	550.0	606.0	686.2	614.6	578.6	554.1	478.4	426.9	384.4	352.9
61°	468.2	516.1	570.0	650.2	579.4	543.0	520.6	446.1	397.1	357.0	325.1
61.5°	435.9	482.9	536.5	616.7	545.1	508.3	487.4	415.9	369.3	330.0	297.3
62°	405.6	450.6	503.8	581.1	510.7	473.9	454.3	387.7	341.4	302.6	269.5
62.5°	376.2	419.6	471.9	547.5	476.8	440.0	422.0	359.0	313.2	275.2	245.8
63°	348.0	389.7	440.4	514.4	444.1	408.1	393.0	330.8	285.4	251.9	223.3
63.5°	320.2	360.3	409.3	481.7	412.2	378.3	363.5	302.6	257.2	230.2	202.4
64°	294.0	332.5	379.9	449.4	382.7	348.8	334.1	274.4	231.4	209.4	183.2
64.5°	268.7	305.5	351.3	417.5	353.7	319.0	305.1	249.0	206.9	189.7	165.6
65°	244.1	280.1	323.9	387.2	324.7	289.5	275.6	225.3	184.4	171.7	150.1
65.5°	220.8	255.6	297.7	357.8	295.2	263.3	249.0	202.8	163.2	155.0	136.2
66°	198.7	233.5	272.3	328.8	266.2	238.0	224.5	182.0	145.2	140.7	124.7



TEST NUMBER: P776359

CATALOG NUMBER: HCDJBL3040CSD-HCD61TRMW-4000lm-5000K

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
67.5°	143.5	173.4	202.8	248.2	195.1	173.0	161.1	130.4	105.5	106.3	99.4
68°	132.5	156.2	182.4	224.5	173.8	154.6	144.3	117.8	98.1	98.5	93.6
68.5°	121.9	142.3	163.6	201.6	155.8	137.8	129.6	107.1	93.6	92.0	89.6
69°	110.8	131.3	147.2	180.7	138.6	123.5	117.4	98.5	90.0	87.5	85.9
69.5°	99.8	120.6	136.2	161.1	124.3	111.2	106.7	92.4	86.3	83.8	82.6
70°	94.1	109.6	125.1	143.1	111.6	101.8	98.5	87.9	82.2	80.1	78.9
70.5°	90.0	99.0	114.5	131.7	102.2	94.1	92.4	84.2	78.5	76.5	75.7
71°	86.3	92.0	103.9	119.8	94.5	89.6	88.3	80.6	74.4	73.2	72.4
71.5°	82.6	87.1	92.8	108.4	89.1	85.9	84.6	76.9	70.7	69.5	68.7
72°	78.9	83.4	88.3	96.9	85.5	82.2	81.4	73.2	67.1	65.8	65.4
72.5°	74.8	79.7	85.1	90.8	81.8	78.5	77.7	69.5	63.4	62.6	62.2
73°	71.2	76.1	81.4	87.1	78.5	75.2	74.0	65.8	60.1	59.3	58.9
73.5°	67.5	72.4	77.7	83.4	74.8	71.6	70.7	62.6	56.8	56.0	56.0
74°	64.2	68.7	74.0	80.1	71.2	68.3	67.1	58.9	53.6	52.8	52.8
74.5°	60.5	65.4	70.7	76.5	67.9	64.6	63.8	55.6	50.3	49.5	49.9
75°	57.2	61.7	67.1	72.8	64.6	61.3	60.5	52.3	47.4	46.6	47.0
75.5°	54.0	58.5	63.8	69.5	61.3	58.1	57.2	49.5	44.6	43.8	44.2
76°	50.7	55.2	60.1	65.8	58.1	55.2	54.0	46.2	41.7	40.9	41.7
76.5°	47.8	51.9	57.2	62.6	54.8	51.9	51.1	43.3	38.8	38.0	38.8
77°	44.6	49.1	54.0	59.3	51.9	49.1	48.3	40.5	36.0	35.6	36.4
77.5°	41.7	45.8	50.7	56.0	49.1	46.2	45.4	37.6	33.5	33.1	33.9
78°	39.3	42.9	47.8	53.2	46.2	43.3	42.5	35.2	31.1	30.7	31.5
78.5°	36.4	40.1	45.0	49.9	43.3	40.9	39.7	32.7	28.6	27.8	29.0
79°	33.9	37.6	42.1	47.0	40.5	38.0	37.2	30.3	26.2	25.4	27.0
79.5°	31.5	34.8	39.3	44.6	38.0	36.0	34.8	27.8	23.7	23.3	24.5
80°	29.0	32.3	36.8	41.7	35.6	33.5	32.3	25.4	21.7	20.9	22.1
80.5°	26.6	29.9	34.3	38.8	33.1	31.1	29.9	22.9	19.6	18.8	20.0
81°	24.5	27.4	31.9	36.4	30.7	28.6	27.4	20.9	17.6	16.8	18.4
81.5°	22.5	25.4	29.4	33.9	28.2	26.6	24.9	18.4	15.5	14.7	16.4
82°	20.0	22.9	27.0	31.5	25.8	24.1	22.9	16.8	13.9	12.7	14.3
82.5°	18.0	20.9	24.9	29.4	23.7	22.1	20.9	14.7	11.9	11.0	12.7
83°	16.4	18.8	22.9	27.0	21.7	20.0	18.8	12.7	10.2	9.4	11.0
83.5°	14.3	17.2	20.9	24.9	20.0	18.0	16.8	11.0	8.6	7.8	9.4
84°	12.7	15.1	18.8	22.9	18.0	16.4	15.1	9.4	7.0	6.1	7.8
84.5°	11.0	13.5	16.8	20.9	15.9	14.3	13.1	7.8	5.7	4.9	6.5
85°	9.0	11.4	15.1	18.8	14.3	12.7	11.4	6.5	4.5	4.1	5.3
85.5°	7.4	9.8	13.1	16.8	12.7	11.0	9.8	5.3	3.3	3.3	4.1
86°	6.1	8.2	11.4	15.1	11.0	9.4	8.6	4.5	2.9	2.5	2.9
86.5°	4.5	6.5	10.2	13.5	9.4	7.8	7.0	3.3	2.0	1.6	1.6
87°	3.7	5.3	8.6	11.9	7.8	6.5	5.7	2.5	1.2	0.8	0.8
87.5°	2.9	4.5	7.4	10.2	6.1	4.9	4.5	1.6	0.8	0.4	0.0
88°	2.0	3.7	5.7	8.6	4.9	3.7	3.3	0.8	0.4	0.0	0.0
88.5°	1.2	2.5	4.5	7.0	3.7	2.5	2.0	0.4	0.0	0.0	0.0



TEST NUMBER: P776359
CATALOG NUMBER: HCDJBL3040CSD-HCD61TRMW-4000lm-5000K

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	2.9	0.4	0.0	0.0	0.0	0.0	0.0	0.0



TEST NUMBER: P776359

CATALOG NUMBER: HCDJBL3040CSD-HCD61TRMW-4000lm-5000K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
0°	2263.0	2263.0	2263.0	2263.0	2263.0	2263.0
0.5°	2257.2	2262.1	2263.0	2263.0	2264.2	2264.2
1°	2255.2	2260.5	2261.3	2261.7	2263.8	2264.2
1.5°	2252.7	2258.5	2259.7	2260.5	2263.0	2264.2
2°	2250.3	2256.4	2258.1	2258.9	2262.1	2263.8
2.5°	2247.8	2254.0	2256.0	2257.2	2260.9	2263.0
3°	2245.0	2251.5	2254.0	2255.6	2259.7	2262.6
3.5°	2242.1	2249.1	2251.5	2253.1	2258.5	2261.3
4°	2239.2	2246.2	2249.1	2251.1	2256.4	2260.5
4.5°	2236.0	2243.3	2246.2	2248.7	2254.8	2258.9
5°	2232.3	2240.1	2242.9	2245.8	2252.7	2257.6
5.5°	2228.6	2236.8	2240.1	2242.9	2250.7	2256.0
6°	2224.5	2233.1	2236.8	2240.1	2248.2	2254.4
6.5°	2220.4	2229.4	2233.5	2236.8	2245.8	2252.3
7°	2216.3	2225.3	2229.8	2233.5	2242.9	2250.3
7.5°	2211.8	2221.3	2225.8	2229.8	2240.1	2247.8
8°	2207.3	2217.2	2221.7	2226.2	2237.2	2245.4
8.5°	2202.4	2212.7	2217.6	2222.1	2233.9	2242.5
9°	2197.5	2208.2	2213.1	2218.0	2230.2	2239.7
9.5°	2192.6	2203.3	2208.6	2213.5	2226.6	2236.4
10°	2186.9	2197.9	2203.7	2209.0	2222.5	2233.5
10.5°	2181.6	2193.0	2198.8	2204.1	2218.4	2229.8
11°	2175.5	2187.3	2193.4	2199.2	2213.9	2226.2
11.5°	2169.7	2181.6	2187.7	2193.9	2209.8	2222.1
12°	2163.6	2175.9	2182.0	2188.5	2205.3	2218.0
12.5°	2157.1	2169.7	2176.3	2182.8	2200.0	2213.5
13°	2150.1	2163.2	2170.1	2177.1	2195.1	2209.0
13.5°	2143.6	2156.6	2163.6	2171.0	2189.4	2204.1
14°	2136.6	2150.1	2157.1	2164.8	2183.6	2199.2
14.5°	2129.2	2143.1	2150.1	2157.9	2177.9	2194.3
15°	2121.9	2135.8	2143.6	2151.7	2172.2	2188.9
15.5°	2114.1	2128.4	2136.2	2144.4	2165.6	2183.2
16°	2106.3	2120.7	2128.8	2137.0	2159.1	2177.5
16.5°	2098.2	2112.9	2120.7	2129.7	2152.1	2171.4
17°	2089.6	2104.7	2112.9	2121.9	2145.2	2164.8
17.5°	2081.4	2096.1	2104.7	2114.1	2138.2	2158.3
18°	2072.4	2087.9	2096.1	2105.9	2130.9	2151.7
18.5°	2063.4	2078.5	2087.5	2097.4	2123.1	2144.8
19°	2054.0	2070.0	2078.5	2088.8	2114.9	2137.4
19.5°	2044.2	2060.5	2069.5	2079.8	2106.8	2130.1
20°	2034.4	2050.7	2060.1	2070.8	2098.6	2122.3
20.5°	2024.6	2041.3	2049.9	2061.4	2090.0	2114.5
21°	2014.3	2030.7	2040.1	2051.6	2081.0	2106.3



TEST NUMBER: P776359

CATALOG NUMBER: HCDJBL3040CSD-HCD61TRMW-4000lm-5000K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
22.5°	1981.6	1998.8	2009.0	2020.9	2052.8	2079.8
23°	1970.6	1988.2	1997.6	2009.8	2043.0	2070.8
23.5°	1958.7	1976.7	1986.5	1998.8	2032.7	2061.4
24°	1946.9	1964.9	1975.1	1987.4	2022.5	2051.6
24.5°	1935.0	1953.0	1963.2	1975.9	2011.9	2041.7
25°	1922.3	1940.7	1951.0	1964.5	2000.4	2031.1
25.5°	1909.7	1928.5	1938.3	1952.2	1989.0	2020.5
26°	1897.0	1915.4	1926.0	1939.9	1977.5	2009.4
26.5°	1883.5	1902.7	1912.9	1926.8	1965.7	1998.8
27°	1870.0	1889.2	1899.8	1913.7	1953.4	1986.9
27.5°	1856.5	1875.7	1885.9	1901.1	1941.1	1975.5
28°	1842.6	1861.8	1872.4	1887.6	1928.5	1963.2
28.5°	1827.9	1847.5	1858.5	1873.7	1915.4	1951.4
29°	1813.2	1833.2	1843.8	1859.4	1902.3	1938.7
29.5°	1798.4	1818.5	1829.5	1845.5	1888.4	1925.6
30°	1782.9	1804.2	1814.4	1830.3	1874.5	1912.5
30.5°	1767.8	1788.6	1799.2	1816.0	1860.6	1899.4
31°	1751.8	1773.1	1784.1	1800.5	1846.3	1885.5
31.5°	1735.5	1757.9	1769.0	1785.3	1831.6	1871.6
32°	1719.1	1742.0	1753.0	1769.4	1816.4	1857.3
32.5°	1702.7	1725.6	1736.7	1753.9	1801.3	1842.6
33°	1685.6	1709.7	1721.1	1737.9	1785.8	1827.9
33.5°	1668.4	1693.3	1704.8	1721.6	1769.8	1812.7
34°	1651.2	1676.2	1688.0	1704.8	1753.9	1797.2
34.5°	1633.2	1659.0	1670.8	1688.4	1737.5	1782.1
35°	1615.6	1641.8	1654.1	1670.8	1721.1	1765.7
35.5°	1597.2	1624.2	1636.9	1653.7	1704.4	1749.8
36°	1579.2	1606.6	1619.3	1636.1	1687.2	1732.6
36.5°	1560.4	1589.1	1602.1	1618.5	1670.0	1716.2
37°	1542.0	1571.1	1584.2	1600.9	1652.0	1699.9
37.5°	1522.8	1552.7	1566.2	1582.9	1634.9	1682.3
38°	1504.0	1534.3	1548.2	1564.5	1616.9	1664.7
38.5°	1484.0	1516.3	1529.8	1545.7	1598.9	1647.1
39°	1465.2	1497.1	1511.8	1527.7	1580.1	1629.1
39.5°	1445.1	1478.2	1493.4	1509.3	1561.7	1611.6
40°	1425.5	1459.8	1474.6	1490.5	1543.3	1593.2
40.5°	1405.9	1441.0	1455.8	1471.3	1524.5	1574.3
41°	1385.8	1421.4	1436.5	1452.5	1505.6	1555.9
41.5°	1365.4	1402.2	1417.7	1433.3	1486.0	1537.1
42°	1345.3	1383.0	1398.5	1414.0	1467.2	1517.9
42.5°	1324.9	1363.7	1379.3	1394.8	1447.6	1498.7
43°	1305.3	1344.5	1360.1	1375.6	1428.4	1479.5
43.5°	1284.8	1324.5	1340.8	1355.6	1408.7	1460.3



TEST NUMBER: P776359

CATALOG NUMBER: HCDJBL3040CSD-HCD61TRMW-4000lm-5000K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
45°	1227.2	1266.0	1282.4	1296.7	1349.4	1401.0
45.5°	1207.9	1246.8	1262.7	1277.1	1329.0	1380.9
46°	1187.5	1227.2	1243.5	1257.8	1309.4	1360.9
46.5°	1166.2	1207.9	1223.9	1237.8	1289.3	1340.4
47°	1143.3	1188.3	1205.1	1218.6	1270.1	1320.8
47.5°	1117.2	1166.6	1185.0	1199.0	1250.5	1301.2
48°	1088.5	1145.0	1163.4	1177.7	1230.8	1281.6
48.5°	1057.5	1120.4	1140.9	1155.6	1210.8	1261.1
49°	1025.6	1093.0	1118.0	1133.1	1189.5	1241.9
49.5°	993.3	1063.2	1089.8	1106.9	1167.9	1220.2
50°	961.0	1031.3	1060.3	1077.9	1144.2	1198.1
50.5°	927.0	998.2	1027.2	1046.0	1117.2	1174.0
51°	893.1	965.1	994.5	1013.3	1086.9	1146.6
51.5°	859.1	930.7	959.7	979.8	1054.6	1115.9
52°	824.8	896.8	926.2	945.4	1021.9	1084.9
52.5°	791.3	861.6	891.9	910.7	988.8	1052.6
53°	756.9	825.6	856.3	875.9	955.6	1019.4
53.5°	723.8	790.9	819.5	839.9	921.3	985.1
54°	690.3	755.7	784.7	804.8	886.9	951.1
54.5°	656.7	722.2	749.1	769.6	852.2	916.4
55°	624.0	687.4	713.2	736.1	817.0	881.6
55.5°	591.3	653.5	678.8	701.3	782.3	846.5
56°	559.8	620.3	644.5	667.4	747.5	812.1
56.5°	529.6	587.2	610.5	634.2	713.2	776.1
57°	498.1	554.9	577.4	601.9	678.8	741.4
57.5°	467.8	523.4	544.7	568.4	645.3	706.2
58°	437.5	491.9	512.8	536.5	611.7	670.6
58.5°	409.7	462.1	482.9	506.2	578.6	635.9
59°	382.3	433.0	453.5	475.6	547.1	601.5
59.5°	355.4	404.4	425.3	446.1	515.6	567.6
60°	328.0	377.4	397.5	417.5	485.0	533.2
60.5°	301.0	350.0	370.9	389.3	455.1	499.7
61°	273.6	324.3	345.1	362.3	424.9	468.2
61.5°	249.9	300.1	321.0	335.7	395.8	435.9
62°	227.0	277.2	297.3	311.2	367.6	405.6
62.5°	206.1	254.8	274.8	287.1	340.2	376.2
63°	186.5	233.9	253.5	263.8	313.6	348.0
63.5°	169.3	214.3	233.5	242.5	288.7	320.2
64°	152.9	195.9	214.7	222.0	264.2	294.0
64.5°	139.0	178.7	196.3	203.2	240.4	268.7
65°	127.6	163.2	179.9	185.2	218.4	244.1
65.5°	117.4	148.4	164.4	168.9	197.9	220.8
66°	108.8	138.2	150.1	153.8	179.5	198.7

TEST NUMBER: P776359

CATALOG NUMBER: HCDJBL3040CSD-HCD61TRMW-4000lm-5000K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
67.5°	90.4	108.0	119.0	119.0	137.4	143.5
68°	87.1	97.7	108.8	112.0	128.0	132.5
68.5°	83.4	92.0	98.5	104.7	118.2	121.9
69°	80.1	88.3	92.4	97.3	108.8	110.8
69.5°	76.9	85.1	88.3	90.0	99.0	99.8
70°	73.6	81.8	85.1	86.7	92.8	94.1
70.5°	70.3	78.1	81.8	83.0	88.3	90.0
71°	67.1	74.8	78.5	79.7	84.6	86.3
71.5°	63.8	71.6	75.2	76.5	81.0	82.6
72°	60.5	68.3	71.6	73.2	77.3	78.9
72.5°	57.7	65.0	68.3	69.9	74.0	74.8
73°	54.8	61.7	65.0	66.7	70.3	71.2
73.5°	51.5	58.9	62.2	63.4	67.1	67.5
74°	48.7	55.6	58.9	60.1	63.4	64.2
74.5°	46.2	52.8	56.0	56.8	60.1	60.5
75°	43.3	49.9	53.2	54.0	56.8	57.2
75.5°	40.9	47.0	50.3	51.1	53.6	54.0
76°	38.0	44.6	47.4	48.3	50.7	50.7
76.5°	35.6	41.7	44.6	45.4	47.4	47.8
77°	33.5	39.3	42.1	42.5	44.6	44.6
77.5°	31.1	36.8	39.3	39.7	41.7	41.7
78°	29.0	34.3	36.8	37.2	38.8	39.3
78.5°	26.6	31.9	34.3	34.8	36.4	36.4
79°	24.5	29.9	31.9	32.3	33.9	33.9
79.5°	22.5	27.4	29.9	29.9	31.1	31.5
80°	20.4	25.4	27.4	27.8	29.0	29.0
80.5°	18.4	23.3	25.4	25.4	26.6	26.6
81°	16.8	21.3	23.3	23.3	24.1	24.5
81.5°	14.7	19.2	21.3	21.3	22.1	22.5
82°	13.1	17.6	19.2	19.2	20.0	20.0
82.5°	11.4	15.5	17.6	17.6	18.0	18.0
83°	9.8	13.9	15.5	15.5	15.9	16.4
83.5°	8.2	12.3	13.9	13.9	13.9	14.3
84°	6.5	10.6	12.3	12.3	12.3	12.7
84.5°	4.9	9.0	10.6	10.6	10.6	11.0
85°	3.7	7.4	9.0	9.0	8.6	9.0
85.5°	2.5	5.7	7.4	7.4	7.4	7.4
86°	1.2	4.1	5.7	6.1	6.1	6.1
86.5°	0.4	2.9	4.5	4.5	4.9	4.5
87°	0.0	1.6	2.9	3.3	3.7	3.7
87.5°	0.0	0.8	1.6	2.0	2.9	2.9
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: P776359
CATALOG NUMBER: HCDJBL3040CSD-HCD61TRMW-4000lm-5000K

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
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Peachtree City, GA 30269

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°	2097.8	2122.7	2144.0	2165.2	2153.4	2141.5	2129.7	2103.5	2081.4	2058.5	2034.8
22°	2088.8	2114.9	2136.6	2158.7	2146.4	2134.6	2121.9	2094.9	2072.4	2049.5	2025.0



44°	1441.0	1492.6	1536.7	1585.0	1543.7	1519.1	1499.9	1448.8	1407.1	1362.1	1317.5
44.5°	1420.6	1472.5	1516.7	1565.8	1523.6	1499.9	1479.9	1428.8	1386.6	1342.1	1297.5



66.5°	178.7	211.8	248.2	301.8	240.9	215.1	201.2	163.2	129.2	127.6	114.9
67°	160.7	191.8	224.9	274.0	216.7	193.0	180.3	145.6	116.1	116.1	106.3



89°	0.8	1.6	3.3	5.7	2.5	1.2	0.8	0.0	0.0	0.0	0.0
89.5°	0.4	0.8	2.0	4.1	1.2	0.4	0.4	0.0	0.0	0.0	0.0

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21.5°	2003.7	2020.5	2029.9	2041.3	2072.0	2097.8
22°	1992.7	2010.3	2019.7	2031.1	2062.6	2088.8



44°	1265.6	1304.9	1321.2	1336.4	1389.1	1441.0
44.5°	1246.4	1285.2	1301.6	1316.3	1369.1	1420.6



66.5°	101.4	128.0	139.9	139.9	162.3	178.7
67°	95.3	117.8	129.2	128.0	147.2	160.7

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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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(END OF REPORT)