

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: P776259

Luminaire Tested: HCDJBL3040CSD-HCD41TRMW-4000lm-5000K

Issue Date: 2/13/2024

Test Information

Test Method: LM-79-2019
Report Number: P776259
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (A2312156B030)
Test Lab:
Issue Date: 2/13/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: HALO COMMERCIAL
Catalog Number: HCDJBL3040CSD-HCD41TRMW-4000lm-5000K
Description: 4 INCH ROUND SHALLOW-WIDE MATTE WHITE TRIM
Light Source: SELECTABLE LUMENS AND CCT ARRAY 90CRI / 5000K CCT
Ballast/Driver: -

Summary

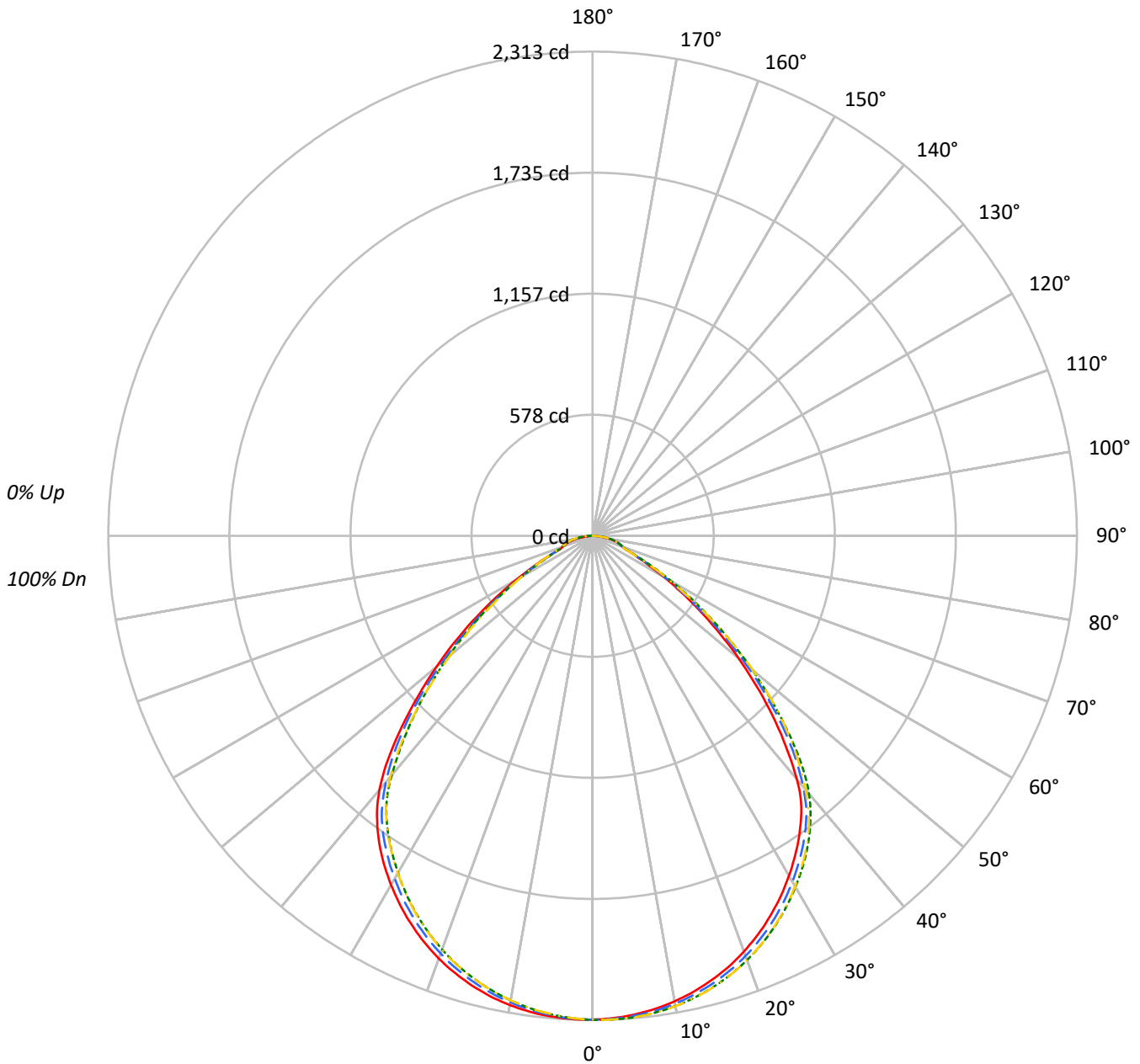
Lumens per Lamp: N/A
Luminaire Lumens: 4826.4 lumens
Efficiency: N/A
Efficacy: 125.4 lumens/watt
Spacing Criteria (0/90/45): 1.22 / 1.22 / 1.28
Luminous Opening: Circular (Dia: 0.33' x H: 0')
CIE Type: Direct

Input Watts (W): 38.5
Input Voltage (V): NR
Input Current (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				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	100	100	100
1	111	107	103	100	108	105	102	99	101	98	96	97	95	93	93	92	90	88	88	88	88
2	103	96	90	85	100	94	89	84	90	86	82	87	84	81	84	81	79	77	77	77	77
3	95	86	79	73	93	84	78	73	82	76	72	79	74	70	76	73	69	67	67	67	67
4	88	77	70	64	86	76	69	64	74	68	63	72	66	62	69	65	61	59	59	59	59
5	81	70	62	56	79	69	62	56	67	60	55	65	59	55	63	58	54	52	52	52	52
6	76	64	56	50	74	63	55	50	61	54	49	60	54	49	58	53	49	47	47	47	47
7	71	58	50	45	69	57	50	45	56	49	44	55	49	44	53	48	44	42	42	42	42
8	66	54	46	40	64	53	45	40	52	45	40	50	44	40	49	44	40	38	38	38	38
9	62	49	42	37	60	49	42	37	48	41	36	47	41	36	46	40	36	34	34	34	34
10	58	46	38	33	57	45	38	33	44	38	33	43	37	33	43	37	33	31	31	31	31

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°	270°
0°	290889	290889	290889	290889
5°	290030	291583	291217	289827
10°	288527	291505	290878	288003
15°	286324	290649	289842	285373
20°	283040	288839	287741	281661
25°	278470	285899	284427	276595
30°	272575	281541	279826	270249
35°	265034	275666	273392	262392
40°	249139	264056	260228	245031
45°	216244	234148	229129	213396
50°	178049	194632	190697	176522
55°	137506	152141	149179	137506
60°	98138	109238	106972	98540
65°	66645	71379	69563	66764
70°	55562	55231	55709	56739
75°	58495	58884	56502	61656
80°	54573	60806	49500	65227
85°	30179	55593	21226	63246

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 112.5°
 Vertical Angle: 45°
 Luminance: 237868 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	218.5	4.5
10°-20°	623.4	12.9
20°-30°	932.5	19.3
30°-40°	1090.4	22.6
40°-50°	964.4	20.0
50°-60°	586.9	12.2
60°-70°	244.5	5.1
70°-80°	126.9	2.6
80°-90°	38.9	0.8
90°-100°	0.0	0.0
100°-110°	0.0	0.0
110°-120°	0.0	0.0
120°-130°	0.0	0.0
130°-140°	0.0	0.0
140°-150°	0.0	0.0
150°-160°	0.0	0.0
160°-170°	0.0	0.0
170°-180°	0.0	0.0
0°-30°	1774.5	36.8
0°-40°	2864.9	59.4
0°-60°	4416.1	91.5
0°-90°	4826.4	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4826.4	100.0

CANDELA DISTRIBUTION:

	0°	90°	180°	270°	360°	Flux
0°	2311	2311	2311	2311	2311	
5°	2296	2308	2305	2294	2296	218
15°	2198	2231	2225	2190	2198	620
25°	2005	2059	2048	1992	2005	923
35°	1725	1794	1780	1708	1725	1074
45°	1215	1316	1287	1199	1215	934
55°	627	693	680	627	627	564
65°	224	240	234	224	224	236
75°	120	121	116	127	120	124
85°	21	38	15	44	21	31
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°	2311.4	2311.4	2311.4	2311.4	2311.4	2311.4	2311.4	2311.4	2311.4	2311.4	2311.4
0.5°	2310.9	2311.4	2311.8	2310.9	2312.6	2313.0	2312.2	2311.8	2311.8	2311.8	2311.4
1°	2310.1	2310.9	2311.4	2311.4	2313.0	2313.4	2313.0	2312.2	2311.8	2311.8	2310.9
1.5°	2308.9	2310.1	2310.9	2311.4	2313.0	2313.8	2313.0	2312.2	2311.8	2311.4	2310.1
2°	2307.7	2308.9	2310.5	2310.9	2313.0	2313.8	2313.0	2312.2	2311.4	2310.5	2309.3
2.5°	2306.0	2307.7	2309.7	2310.5	2312.6	2313.8	2313.0	2311.8	2310.9	2309.7	2308.1
3°	2304.4	2306.4	2308.5	2309.7	2312.2	2313.4	2312.2	2311.4	2310.1	2308.9	2306.9
3.5°	2302.8	2304.8	2307.3	2308.9	2311.4	2313.0	2311.8	2310.5	2309.3	2307.3	2305.2
4°	2300.7	2302.8	2305.6	2307.7	2310.5	2312.2	2310.5	2309.3	2308.1	2306.0	2303.2
4.5°	2298.3	2300.7	2303.6	2306.0	2309.3	2310.9	2309.7	2308.1	2306.4	2304.4	2301.1
5°	2295.8	2298.7	2301.5	2304.4	2308.1	2309.7	2308.1	2306.9	2305.2	2302.4	2298.7
5.5°	2292.9	2295.8	2299.5	2302.8	2306.0	2308.5	2306.4	2304.8	2303.2	2299.9	2296.2
6°	2289.7	2293.4	2297.0	2300.7	2304.4	2306.4	2304.8	2303.2	2301.1	2297.9	2293.4
6.5°	2286.4	2290.1	2294.6	2298.3	2302.4	2304.8	2302.8	2301.1	2299.1	2295.4	2290.5
7°	2283.1	2286.8	2291.7	2295.8	2299.9	2302.4	2300.3	2298.7	2296.2	2292.5	2287.6
7.5°	2279.4	2283.5	2288.4	2292.9	2297.4	2300.3	2297.9	2296.2	2293.4	2289.3	2283.9
8°	2275.8	2279.9	2285.6	2290.1	2294.2	2297.4	2295.0	2293.4	2290.5	2286.0	2280.3
8.5°	2271.7	2276.2	2281.5	2286.8	2291.3	2295.0	2292.1	2290.1	2287.2	2282.7	2276.6
9°	2267.2	2272.1	2277.8	2283.5	2288.0	2291.7	2288.9	2286.8	2283.9	2278.6	2272.5
9.5°	2262.7	2267.6	2274.1	2279.4	2284.8	2288.4	2285.6	2283.5	2280.3	2274.9	2268.0
10°	2257.8	2263.1	2269.6	2275.8	2281.1	2284.8	2281.9	2279.9	2276.2	2270.9	2263.5
10.5°	2252.9	2258.6	2265.1	2271.3	2277.0	2281.1	2277.8	2275.8	2272.1	2266.4	2259.0
11°	2247.5	2253.3	2260.6	2267.2	2272.9	2277.0	2273.7	2271.3	2268.0	2261.4	2253.7
11.5°	2242.2	2248.4	2255.7	2262.7	2268.4	2272.9	2269.2	2267.2	2263.1	2256.5	2248.4
12°	2236.5	2242.6	2250.4	2257.4	2263.9	2268.4	2264.7	2262.7	2258.6	2251.6	2243.0
12.5°	2230.4	2236.9	2245.1	2252.4	2259.0	2263.9	2259.8	2257.4	2253.7	2246.3	2237.3
13°	2224.6	2231.2	2239.4	2247.1	2253.7	2259.0	2254.5	2252.4	2248.4	2240.6	2231.6
13.5°	2217.7	2225.0	2233.2	2241.8	2248.4	2253.7	2249.2	2247.1	2242.6	2234.9	2225.4
14°	2211.5	2218.9	2227.5	2236.1	2242.6	2248.4	2243.9	2241.4	2236.9	2228.7	2218.9
14.5°	2204.6	2212.4	2220.9	2229.9	2236.9	2242.6	2237.7	2235.3	2230.8	2222.6	2212.4
15°	2197.6	2205.4	2214.8	2223.8	2230.8	2236.9	2232.0	2229.5	2224.6	2216.0	2205.4
15.5°	2190.3	2198.0	2207.9	2216.9	2224.6	2230.4	2225.4	2223.0	2218.1	2209.5	2198.4
16°	2182.5	2190.7	2200.5	2210.3	2218.1	2224.2	2218.5	2216.4	2211.1	2202.1	2191.1
16.5°	2174.7	2183.3	2193.5	2203.4	2211.1	2217.3	2211.9	2209.5	2204.6	2195.2	2183.3
17°	2166.9	2175.5	2186.2	2196.0	2204.2	2210.3	2205.0	2202.1	2196.8	2187.8	2175.5
17.5°	2158.8	2167.4	2178.4	2189.0	2196.8	2203.4	2197.2	2194.8	2189.4	2179.6	2167.4
18°	2150.2	2159.2	2170.2	2181.3	2189.4	2195.6	2189.9	2187.4	2182.1	2171.9	2159.2
18.5°	2141.2	2150.6	2162.0	2173.1	2181.7	2187.8	2182.1	2179.6	2173.9	2163.7	2150.6
19°	2132.2	2142.0	2153.4	2164.9	2173.5	2180.0	2173.9	2171.4	2166.1	2155.5	2142.0
19.5°	2122.8	2133.0	2144.9	2156.7	2165.3	2171.9	2165.3	2163.3	2157.5	2146.5	2133.0
20°	2113.4	2123.6	2135.9	2148.1	2156.7	2163.7	2156.7	2154.3	2148.5	2137.9	2123.6
20.5°	2103.9	2114.2	2126.9	2139.1	2148.1	2154.7	2147.7	2145.3	2139.5	2128.5	2113.8
21°	2093.3	2104.4	2117.0	2130.1	2139.1	2146.1	2138.7	2136.3	2130.5	2119.1	2104.4



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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°	2062.2	2073.7	2087.6	2101.1	2110.9	2117.9	2109.7	2107.6	2101.5	2089.6	2073.7
23°	2051.2	2063.0	2076.9	2091.3	2101.1	2108.0	2099.4	2097.4	2091.3	2079.4	2062.6
23.5°	2040.1	2052.0	2066.3	2080.6	2090.9	2097.8	2089.2	2086.8	2081.0	2068.4	2052.0
24°	2028.7	2040.9	2055.7	2070.4	2080.2	2087.6	2078.6	2076.1	2070.4	2057.7	2040.9
24.5°	2017.2	2029.5	2044.6	2059.4	2069.6	2076.9	2067.9	2065.5	2059.4	2046.7	2029.5
25°	2005.4	2017.6	2033.2	2048.3	2058.9	2065.9	2056.5	2054.4	2048.3	2035.6	2018.0
25.5°	1993.5	2006.2	2021.7	2037.3	2047.9	2054.9	2045.4	2043.0	2037.3	2024.2	2006.2
26°	1980.8	1994.3	2009.9	2025.8	2036.4	2043.8	2034.0	2031.5	2025.8	2012.3	1993.9
26.5°	1968.9	1982.0	1998.0	2014.4	2024.6	2032.4	2022.1	2019.7	2013.5	2000.9	1982.0
27°	1956.3	1969.4	1985.7	2002.1	2013.1	2020.9	2009.9	2007.8	2001.7	1988.6	1969.8
27.5°	1943.2	1957.1	1973.9	1990.2	2000.9	2008.6	1998.0	1995.5	1989.8	1975.9	1957.1
28°	1930.1	1944.0	1960.8	1977.9	1988.6	1996.4	1985.3	1983.3	1977.1	1964.0	1944.0
28.5°	1916.6	1930.9	1948.1	1965.3	1976.7	1984.1	1972.6	1970.6	1964.4	1950.5	1930.9
29°	1903.5	1917.4	1935.0	1952.6	1963.6	1971.4	1959.5	1957.9	1951.8	1938.3	1917.8
29.5°	1889.6	1904.3	1921.9	1939.5	1950.9	1958.7	1946.4	1944.8	1938.7	1924.8	1904.7
30°	1875.7	1890.8	1908.4	1926.4	1937.4	1945.6	1933.4	1931.3	1925.6	1911.7	1890.8
30.5°	1861.4	1876.9	1894.9	1913.3	1924.4	1932.1	1919.9	1917.8	1912.1	1897.8	1876.9
31°	1847.0	1862.6	1881.4	1899.4	1910.9	1919.0	1905.9	1903.9	1898.2	1884.3	1863.0
31.5°	1832.7	1848.7	1867.1	1885.9	1896.9	1905.1	1892.0	1890.0	1884.3	1870.4	1849.5
32°	1818.4	1834.4	1852.8	1872.0	1883.0	1891.2	1877.7	1876.1	1870.4	1856.9	1834.8
32.5°	1803.3	1819.6	1838.9	1857.7	1869.5	1877.3	1863.4	1861.8	1856.0	1842.5	1820.0
33°	1788.5	1804.9	1824.1	1843.4	1854.8	1863.0	1848.7	1847.0	1841.7	1827.8	1805.3
33.5°	1773.4	1789.8	1809.4	1829.0	1840.1	1848.3	1833.9	1831.9	1826.6	1812.7	1790.2
34°	1757.4	1774.6	1793.9	1813.9	1825.4	1833.5	1818.0	1816.4	1811.0	1797.1	1774.6
34.5°	1741.9	1758.7	1778.7	1798.4	1810.2	1817.6	1802.9	1800.8	1795.5	1782.0	1759.1
35°	1725.1	1742.7	1762.8	1782.8	1794.3	1802.0	1786.5	1784.9	1779.5	1766.0	1743.1
35.5°	1708.8	1726.4	1746.4	1766.9	1778.3	1786.1	1770.5	1768.5	1763.6	1749.7	1726.8
36°	1692.0	1709.6	1730.0	1750.5	1762.4	1770.1	1753.4	1750.9	1746.4	1732.5	1709.6
36.5°	1674.4	1692.4	1712.9	1734.1	1745.2	1752.9	1735.4	1733.3	1728.4	1714.9	1692.0
37°	1656.4	1674.4	1694.9	1715.7	1727.2	1734.9	1717.4	1715.3	1710.4	1696.9	1674.0
37.5°	1637.2	1656.0	1676.9	1698.1	1709.2	1716.9	1697.7	1696.5	1692.0	1678.1	1653.1
38°	1617.1	1636.4	1658.4	1679.3	1690.4	1698.5	1676.4	1676.0	1672.8	1658.0	1631.4
38.5°	1594.6	1613.9	1636.4	1660.1	1671.1	1678.5	1653.5	1653.1	1651.9	1637.6	1609.4
39°	1570.9	1589.3	1612.6	1638.8	1650.7	1657.2	1629.8	1630.2	1630.2	1615.5	1585.2
39.5°	1544.7	1564.4	1589.3	1617.1	1629.4	1634.7	1606.1	1606.1	1607.7	1592.2	1561.5
40°	1516.5	1537.8	1564.8	1593.0	1607.3	1610.6	1581.1	1580.3	1584.0	1567.6	1535.7
40.5°	1487.4	1509.5	1538.6	1568.9	1583.6	1585.6	1556.2	1554.9	1558.6	1541.9	1511.6
41°	1458.0	1481.3	1512.4	1542.7	1558.6	1560.3	1531.2	1529.6	1531.6	1515.7	1484.2
41.5°	1428.5	1452.7	1485.0	1516.1	1531.6	1534.5	1505.0	1502.6	1503.8	1488.7	1457.6
42°	1397.4	1422.8	1457.6	1488.7	1503.8	1507.9	1478.9	1476.4	1475.2	1460.9	1429.8
42.5°	1367.6	1392.9	1429.4	1460.9	1474.4	1480.5	1451.4	1448.6	1445.3	1431.8	1401.5
43°	1337.3	1363.5	1400.7	1431.8	1444.1	1452.3	1424.0	1420.4	1414.6	1402.4	1372.1
43.5°	1307.0	1333.6	1370.0	1402.4	1412.2	1424.4	1396.2	1391.7	1382.7	1372.1	1343.4



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
45°	1215.0	1244.0	1278.4	1309.1	1315.6	1336.5	1308.7	1303.0	1287.4	1277.2	1252.2
45.5°	1184.3	1213.8	1246.9	1276.8	1282.5	1305.0	1279.6	1272.3	1255.1	1244.5	1221.5
46°	1154.0	1183.5	1215.0	1243.6	1249.0	1274.3	1248.5	1240.4	1223.2	1211.7	1189.2
46.5°	1123.4	1152.8	1183.1	1210.5	1216.6	1242.8	1217.9	1209.3	1191.3	1179.0	1157.3
47°	1091.9	1122.5	1151.2	1177.0	1184.7	1210.5	1187.2	1178.2	1160.2	1146.3	1125.8
47.5°	1061.2	1091.5	1118.0	1143.8	1152.4	1178.2	1156.9	1145.9	1129.1	1114.4	1094.3
48°	1030.5	1060.0	1086.5	1110.3	1120.5	1145.9	1125.0	1114.0	1097.6	1081.2	1061.6
48.5°	999.8	1029.3	1053.8	1076.7	1089.0	1113.5	1094.3	1081.6	1066.5	1049.3	1030.5
49°	969.5	998.2	1021.9	1044.0	1057.1	1081.6	1061.6	1050.1	1035.8	1017.0	998.2
49.5°	939.3	966.3	990.0	1010.9	1025.2	1048.9	1029.3	1018.2	1004.7	985.5	966.7
50°	909.4	935.6	957.7	978.1	994.1	1017.0	997.8	986.3	974.0	953.6	935.2
50.5°	879.5	904.1	925.8	945.4	963.0	985.1	964.6	955.2	943.0	922.9	903.7
51°	849.7	873.4	894.3	913.5	931.5	952.8	933.5	924.5	913.1	892.6	873.0
51.5°	821.0	843.5	863.2	881.6	900.8	922.5	900.8	893.5	883.2	862.0	842.7
52°	792.0	813.3	832.1	850.9	870.5	891.0	868.1	862.4	854.2	831.3	812.5
52.5°	763.8	783.4	801.4	820.2	839.9	859.5	837.0	832.1	823.9	801.8	781.8
53°	735.5	754.0	770.3	790.0	810.0	828.4	805.5	802.2	794.0	772.0	752.3
53.5°	707.7	724.9	740.5	760.1	779.7	798.5	774.8	772.0	764.6	743.7	723.3
54°	680.3	696.3	710.2	731.0	751.1	768.3	742.9	742.5	737.2	714.7	695.5
54.5°	653.3	667.2	681.5	702.0	722.5	738.8	713.0	713.9	708.5	686.9	667.6
55°	626.7	639.8	653.3	674.2	693.4	710.2	683.2	685.2	679.9	659.0	639.4
55.5°	601.0	612.8	624.7	646.4	665.2	681.1	653.7	657.0	652.1	632.5	612.4
56°	575.6	586.2	596.9	619.8	637.4	651.7	625.1	628.4	625.9	605.5	586.6
56.5°	550.2	559.6	570.7	593.2	610.4	623.9	596.9	601.4	598.5	579.7	560.9
57°	525.7	534.3	544.5	567.4	583.4	596.9	569.5	574.4	571.9	554.7	535.9
57.5°	501.5	508.9	518.7	541.6	557.2	569.5	542.9	548.2	546.1	530.2	511.0
58°	477.8	484.4	493.4	517.5	531.0	542.5	517.1	522.4	521.6	506.0	487.6
58.5°	454.9	460.6	469.6	493.0	506.9	516.7	491.7	496.2	496.2	482.7	464.7
59°	432.8	437.7	447.1	470.5	481.5	491.3	467.2	471.3	471.7	459.8	441.8
59.5°	411.1	415.2	424.6	446.7	457.4	466.4	443.0	447.5	448.0	437.3	420.5
60°	389.9	393.5	403.4	424.6	434.0	441.8	419.7	423.8	425.0	415.6	399.7
60.5°	369.8	372.7	382.5	403.0	411.5	418.5	398.0	400.5	402.5	394.8	379.2
61°	349.8	352.6	362.5	382.1	389.5	396.4	378.0	378.8	380.9	375.5	361.2
61.5°	331.0	333.8	343.6	361.2	369.4	376.0	357.5	358.8	360.8	356.3	343.6
62°	313.0	315.8	325.2	342.0	349.4	355.1	337.5	338.3	340.8	337.1	325.6
62.5°	295.8	298.2	307.6	322.8	329.7	334.6	317.5	317.9	320.7	317.9	307.6
63°	279.4	281.5	290.9	304.4	309.7	313.8	297.4	297.8	301.1	298.6	289.6
63.5°	264.3	265.9	274.9	286.8	289.6	293.3	279.0	279.8	283.5	281.5	273.7
64°	249.5	251.6	259.8	269.6	272.5	275.3	262.2	262.2	266.3	265.5	258.5
64.5°	235.6	237.7	245.5	254.0	255.7	258.5	246.7	246.7	250.0	250.0	244.6
65°	223.8	225.0	232.0	239.3	239.7	242.6	231.5	232.0	233.6	235.6	231.5
65.5°	212.3	213.5	219.7	225.4	225.0	227.5	217.6	218.0	218.0	222.5	219.3
66°	201.3	202.9	208.2	212.3	211.1	214.0	205.0	205.4	203.3	209.5	207.8



TEST NUMBER: P776259

CATALOG NUMBER: HCDJBL3040CSD-HCD41TRMW-4000lm-5000K

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
67.5°	174.7	176.7	179.2	180.4	178.0	180.8	173.9	175.5	171.0	178.8	180.0
68°	167.7	169.8	171.4	172.2	169.8	172.2	166.5	168.1	164.0	171.4	172.6
68.5°	161.2	164.0	164.9	164.9	162.8	164.9	160.8	162.0	160.0	164.9	166.1
69°	156.7	159.1	158.7	158.7	157.5	159.1	156.3	157.1	157.1	160.0	160.8
69.5°	153.8	154.6	154.2	153.8	153.0	154.2	153.0	153.8	154.2	155.9	157.1
70°	151.0	151.0	151.0	150.5	150.1	151.4	150.5	151.0	151.4	153.0	154.2
70.5°	148.1	148.5	149.3	148.1	147.7	148.9	148.1	148.1	148.5	150.1	151.8
71°	145.2	145.6	146.5	145.2	144.8	146.0	145.2	144.8	145.2	147.3	149.3
71.5°	142.8	142.8	144.0	142.8	142.4	143.6	142.4	142.0	142.4	144.0	146.5
72°	139.9	139.9	141.1	140.3	139.5	140.7	139.5	138.7	138.7	140.7	143.6
72.5°	137.5	137.5	138.3	137.9	136.6	137.9	136.6	135.4	135.4	137.5	140.7
73°	134.2	134.2	135.4	135.0	133.8	135.0	133.4	131.7	131.7	134.2	137.5
73.5°	130.9	130.9	132.5	131.7	130.9	131.7	130.1	128.0	128.0	130.5	134.2
74°	127.2	127.6	129.3	128.9	127.6	128.9	126.8	124.4	124.4	126.8	130.9
74.5°	123.5	124.0	126.0	126.0	124.4	125.6	123.5	120.7	120.3	123.1	127.6
75°	120.3	120.3	122.7	122.7	121.1	122.3	119.9	116.6	116.2	119.0	124.0
75.5°	116.2	116.6	119.5	119.5	117.8	119.0	116.2	112.5	112.1	115.0	120.3
76°	112.1	112.5	115.8	116.2	114.5	115.8	112.5	108.4	107.6	110.9	116.6
76.5°	108.4	108.8	112.1	112.5	110.9	112.1	108.4	104.3	103.5	106.4	112.9
77°	103.9	104.7	108.4	109.2	107.2	108.4	104.7	99.8	98.6	101.9	109.2
77.5°	99.4	100.2	104.7	105.5	103.5	104.7	100.6	95.3	93.7	97.0	104.7
78°	94.9	96.1	100.6	101.9	99.8	101.0	96.1	90.4	88.8	92.5	100.6
78.5°	90.4	91.6	96.5	98.2	95.7	97.0	92.0	85.5	83.9	87.5	96.1
79°	85.5	86.7	92.5	94.1	92.0	92.9	87.5	80.6	79.0	82.6	92.0
79.5°	80.6	82.2	88.4	90.0	88.0	89.2	83.0	75.7	73.6	77.3	87.5
80°	75.3	76.9	83.9	85.9	83.9	84.7	78.5	70.8	68.3	72.0	82.6
80.5°	70.4	72.0	79.4	81.8	79.4	80.6	74.0	65.5	63.0	67.1	78.1
81°	65.5	67.1	74.9	77.7	75.3	76.1	69.5	60.1	57.3	61.4	73.2
81.5°	59.7	61.8	70.4	73.2	70.8	71.6	64.6	54.8	52.0	56.0	68.3
82°	54.4	56.5	65.5	68.7	66.3	67.5	60.1	49.5	46.2	50.7	63.8
82.5°	49.1	51.1	61.0	64.2	61.8	62.6	55.6	44.6	40.9	45.0	58.9
83°	43.4	45.8	56.5	59.7	57.3	58.1	51.1	40.1	35.2	40.5	54.4
83.5°	37.6	40.5	52.0	55.2	52.8	53.6	46.6	35.6	29.9	36.0	49.5
84°	31.9	35.2	47.5	50.7	48.3	49.1	42.1	31.1	24.1	31.5	45.4
84.5°	26.2	30.3	43.0	45.8	43.4	44.2	37.6	27.0	18.4	26.6	40.9
85°	20.9	26.2	38.9	41.3	38.5	39.3	33.1	22.5	14.7	22.1	36.4
85.5°	16.0	22.9	34.4	36.4	33.5	34.4	28.2	19.2	12.7	19.6	32.3
86°	13.9	20.0	29.9	31.5	28.6	29.5	23.7	16.4	11.0	16.8	27.8
86.5°	11.9	16.8	25.0	26.6	23.7	24.5	19.2	13.5	9.0	14.3	23.3
87°	9.8	13.9	20.5	21.3	18.8	19.2	14.7	10.2	7.4	11.5	18.8
87.5°	7.4	11.0	15.5	16.4	13.9	14.3	9.8	7.4	5.3	9.0	14.3
88°	5.3	8.2	11.9	12.3	9.0	9.8	5.7	4.5	3.3	6.1	9.8
88.5°	3.7	5.3	8.2	8.2	4.9	5.3	2.0	2.0	2.0	3.7	5.7



TEST NUMBER: P776259
CATALOG NUMBER: HCDJBL3040CSD-HCD41TRMW-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	0.4	0.4	0.0	0.0	0.0	0.4	0.0	0.4	0.0



TEST NUMBER: P776259

CATALOG NUMBER: HCDJBL3040CSD-HCD41TRMW-4000lm-5000K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
0°	2311.4	2311.4	2311.4	2311.4	2311.4	2311.4
0.5°	2310.1	2311.4	2311.4	2310.9	2310.5	2310.9
1°	2309.3	2310.5	2309.7	2310.1	2309.7	2310.1
1.5°	2308.5	2309.3	2308.5	2308.5	2308.5	2308.9
2°	2306.9	2307.7	2306.9	2307.3	2306.9	2307.7
2.5°	2305.6	2306.0	2305.2	2305.6	2305.2	2306.0
3°	2304.0	2304.0	2302.8	2303.6	2303.2	2304.4
3.5°	2301.9	2301.9	2300.7	2301.5	2301.5	2302.8
4°	2299.9	2299.9	2297.9	2299.1	2299.1	2300.7
4.5°	2297.4	2297.0	2295.4	2296.6	2296.6	2298.3
5°	2294.6	2294.2	2292.5	2293.8	2293.8	2295.8
5.5°	2291.7	2291.3	2289.3	2290.5	2290.9	2292.9
6°	2288.9	2288.0	2285.6	2287.6	2287.6	2289.7
6.5°	2285.6	2284.8	2281.9	2283.9	2284.4	2286.4
7°	2282.3	2281.1	2278.2	2280.3	2280.7	2283.1
7.5°	2278.2	2277.0	2274.1	2276.2	2276.6	2279.4
8°	2274.5	2272.9	2269.6	2272.1	2272.9	2275.8
8.5°	2270.0	2268.0	2265.5	2268.0	2268.4	2271.7
9°	2265.9	2263.5	2260.6	2263.5	2264.3	2267.2
9.5°	2261.0	2258.6	2255.7	2258.6	2259.4	2262.7
10°	2256.1	2253.7	2250.4	2253.3	2254.5	2257.8
10.5°	2251.2	2248.4	2244.7	2248.4	2249.6	2252.9
11°	2245.5	2243.0	2238.9	2242.6	2244.3	2247.5
11.5°	2240.2	2237.3	2233.2	2236.9	2238.5	2242.2
12°	2234.4	2231.2	2227.1	2231.2	2232.4	2236.5
12.5°	2228.3	2224.6	2220.5	2225.0	2226.7	2230.4
13°	2222.2	2218.5	2214.0	2218.5	2220.1	2224.6
13.5°	2215.2	2211.5	2207.4	2211.9	2213.6	2217.7
14°	2208.7	2205.0	2200.5	2205.4	2206.6	2211.5
14.5°	2201.7	2197.6	2193.1	2198.0	2199.7	2204.6
15°	2194.4	2190.3	2185.4	2191.1	2192.7	2197.6
15.5°	2187.0	2182.9	2178.0	2183.3	2184.9	2190.3
16°	2179.2	2174.7	2169.8	2175.5	2177.2	2182.5
16.5°	2171.4	2166.9	2161.6	2167.4	2169.4	2174.7
17°	2163.3	2158.4	2153.0	2159.2	2161.2	2166.9
17.5°	2154.7	2149.8	2144.4	2150.6	2152.6	2158.8
18°	2146.1	2140.8	2135.0	2142.0	2144.0	2150.2
18.5°	2137.1	2131.8	2126.0	2133.0	2135.0	2141.2
19°	2128.1	2122.4	2116.6	2123.6	2125.6	2132.2
19.5°	2118.7	2112.9	2106.8	2114.2	2116.2	2122.8
20°	2109.3	2103.1	2097.0	2104.4	2106.8	2113.4
20.5°	2099.0	2092.9	2086.4	2094.1	2097.4	2103.9
21°	2088.8	2082.3	2075.7	2084.3	2087.2	2093.3

TEST NUMBER: P776259

CATALOG NUMBER: HCDJBL3040CSD-HCD41TRMW-4000lm-5000K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
22.5°	2057.3	2050.4	2043.0	2052.0	2055.3	2062.2
23°	2046.3	2039.3	2031.5	2040.9	2044.2	2051.2
23.5°	2035.2	2028.3	2020.1	2029.5	2032.8	2040.1
24°	2023.8	2016.0	2008.2	2017.6	2020.9	2028.7
24.5°	2011.9	2004.1	1996.4	2006.2	2009.4	2017.2
25°	2000.0	1991.9	1984.1	1993.9	1997.6	2005.4
25.5°	1987.8	1979.6	1971.0	1981.6	1985.3	1993.5
26°	1975.5	1966.9	1958.7	1969.4	1973.0	1980.8
26.5°	1962.8	1954.6	1946.0	1956.3	1960.4	1968.9
27°	1950.1	1941.5	1932.5	1943.6	1947.7	1956.3
27.5°	1937.4	1928.4	1919.4	1930.5	1934.6	1943.2
28°	1924.4	1914.5	1905.9	1917.0	1921.1	1930.1
28.5°	1910.9	1901.4	1892.0	1903.1	1908.0	1916.6
29°	1897.4	1887.9	1878.5	1889.2	1894.1	1903.5
29.5°	1883.4	1874.0	1863.8	1875.7	1880.2	1889.6
30°	1869.9	1859.7	1850.3	1861.4	1866.3	1875.7
30.5°	1855.6	1845.4	1835.6	1847.0	1851.9	1861.4
31°	1841.7	1831.1	1821.3	1833.1	1837.6	1847.0
31.5°	1827.4	1816.8	1805.7	1818.0	1822.9	1832.7
32°	1812.7	1801.6	1791.4	1803.3	1808.2	1818.4
32.5°	1797.9	1786.9	1776.3	1788.1	1793.4	1803.3
33°	1782.8	1771.8	1761.1	1773.0	1778.3	1788.5
33.5°	1767.7	1756.2	1745.2	1757.9	1763.2	1773.4
34°	1751.7	1740.7	1729.2	1741.9	1747.2	1757.4
34.5°	1735.8	1724.3	1713.3	1725.9	1731.3	1741.9
35°	1719.8	1707.9	1696.5	1709.2	1714.9	1725.1
35.5°	1703.0	1691.2	1679.3	1692.4	1698.1	1708.8
36°	1685.9	1674.0	1662.1	1676.0	1681.4	1692.0
36.5°	1668.3	1656.4	1644.5	1658.0	1663.4	1674.4
37°	1649.9	1638.0	1626.1	1640.0	1645.4	1656.4
37.5°	1629.0	1618.4	1606.5	1621.6	1626.9	1637.2
38°	1605.7	1596.7	1584.0	1602.4	1606.9	1617.1
38.5°	1581.9	1573.4	1559.4	1579.9	1583.2	1594.6
39°	1557.0	1548.0	1535.3	1554.9	1559.4	1570.9
39.5°	1531.2	1520.2	1509.1	1529.2	1534.1	1544.7
40°	1504.6	1491.5	1480.9	1502.2	1507.5	1516.5
40.5°	1477.6	1462.9	1452.7	1474.4	1478.9	1487.4
41°	1449.8	1433.9	1423.2	1446.1	1450.2	1458.0
41.5°	1421.2	1404.0	1393.4	1417.9	1420.4	1428.5
42°	1392.1	1375.4	1363.5	1388.4	1390.1	1397.4
42.5°	1363.1	1346.7	1332.4	1359.0	1359.4	1367.6
43°	1333.6	1317.7	1301.7	1329.1	1329.1	1337.3
43.5°	1304.6	1287.8	1270.2	1298.5	1297.6	1307.0

TEST NUMBER: P776259

CATALOG NUMBER: HCDJBL3040CSD-HCD41TRMW-4000lm-5000K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
45°	1216.2	1199.0	1178.2	1204.4	1203.1	1215.0
45.5°	1186.8	1169.2	1147.5	1172.5	1171.2	1184.3
46°	1157.3	1140.1	1117.2	1140.5	1139.7	1154.0
46.5°	1127.9	1109.5	1086.5	1109.5	1108.2	1123.4
47°	1097.2	1079.2	1056.7	1076.7	1076.7	1091.9
47.5°	1067.7	1049.3	1026.0	1044.8	1045.6	1061.2
48°	1037.9	1019.5	996.1	1012.1	1015.0	1030.5
48.5°	1007.6	989.2	965.5	981.4	984.3	999.8
49°	976.9	960.1	936.8	949.1	954.0	969.5
49.5°	946.6	931.1	907.8	918.4	923.7	939.3
50°	916.4	901.6	877.9	886.9	893.9	909.4
50.5°	886.5	872.6	848.9	857.0	864.0	879.5
51°	857.0	844.8	820.2	826.8	834.1	849.7
51.5°	827.2	816.1	792.0	797.7	804.7	821.0
52°	797.7	788.3	763.8	768.7	776.0	792.0
52.5°	768.7	760.5	735.5	741.3	747.8	763.8
53°	740.0	733.1	708.1	713.0	720.0	735.5
53.5°	711.8	706.1	681.5	685.6	692.2	707.7
54°	683.6	678.7	654.5	659.5	664.8	680.3
54.5°	656.2	652.5	628.8	633.7	638.2	653.3
55°	629.2	626.7	603.4	607.9	612.8	626.7
55.5°	602.6	601.0	578.5	583.8	587.5	601.0
56°	576.4	575.2	553.5	559.6	562.1	575.6
56.5°	551.0	550.6	529.8	536.3	538.0	550.2
57°	525.7	526.1	506.5	513.4	514.6	525.7
57.5°	501.1	502.4	483.5	490.9	491.7	501.5
58°	477.8	479.0	461.9	470.0	469.2	477.8
58.5°	454.5	456.5	440.6	449.2	448.4	454.9
59°	432.0	434.0	419.7	428.7	427.1	432.8
59.5°	409.9	412.4	400.1	409.1	407.5	411.1
60°	389.0	391.5	380.5	390.7	387.8	389.9
60.5°	370.6	371.0	361.6	372.3	369.4	369.8
61°	351.8	351.4	343.6	354.7	351.0	349.8
61.5°	333.0	332.6	326.9	337.5	333.8	331.0
62°	314.6	314.2	310.5	321.5	317.0	313.0
62.5°	295.8	297.0	294.5	306.0	301.1	295.8
63°	279.8	280.6	279.4	290.9	285.5	279.4
63.5°	265.1	264.7	265.1	276.5	271.2	264.3
64°	250.4	250.0	251.6	262.6	257.3	249.5
64.5°	236.9	236.5	238.9	249.5	244.2	235.6
65°	224.6	224.2	226.6	236.9	231.1	223.8
65.5°	213.1	213.1	215.2	225.4	220.5	212.3
66°	202.5	202.9	205.0	214.4	209.5	201.3



TEST NUMBER: P776259

CATALOG NUMBER: HCDJBL3040CSD-HCD41TRMW-4000lm-5000K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
67.5°	177.5	179.2	178.8	185.7	182.0	174.7
68°	171.4	172.6	172.2	178.0	174.3	167.7
68.5°	165.7	166.9	166.1	171.0	167.7	161.2
69°	160.8	162.0	160.8	164.5	162.0	156.7
69.5°	156.7	157.5	156.3	159.1	157.1	153.8
70°	154.2	154.2	153.0	155.0	153.4	151.0
70.5°	151.8	151.8	150.5	152.2	150.1	148.1
71°	148.9	148.9	148.1	149.7	147.3	145.2
71.5°	146.5	146.5	145.6	146.9	144.8	142.8
72°	143.6	143.6	142.8	144.4	142.0	139.9
72.5°	140.7	141.1	139.9	141.5	139.1	137.5
73°	137.9	138.7	137.5	139.1	136.2	134.2
73.5°	135.0	135.8	134.6	136.6	133.0	130.9
74°	132.1	133.0	132.1	133.4	129.7	127.2
74.5°	128.9	130.1	128.9	130.1	126.0	123.5
75°	125.6	126.8	125.6	127.2	122.7	120.3
75.5°	122.3	123.5	122.3	123.5	118.6	116.2
76°	119.0	120.3	119.0	120.3	115.0	112.1
76.5°	115.4	116.6	115.8	116.6	110.9	108.4
77°	111.7	113.3	112.1	112.9	106.8	103.9
77.5°	108.0	109.6	108.8	109.2	102.7	99.4
78°	104.3	106.0	105.1	105.5	98.2	94.9
78.5°	100.2	102.3	101.0	101.5	93.7	90.4
79°	96.1	98.2	97.4	97.4	89.2	85.5
79.5°	92.0	94.1	93.3	92.9	84.3	80.6
80°	88.0	90.0	88.8	88.8	79.4	75.3
80.5°	83.5	85.5	84.7	84.3	74.5	70.4
81°	79.4	81.4	80.6	79.8	69.5	65.5
81.5°	74.9	76.9	76.1	75.3	64.2	59.7
82°	70.0	72.4	71.6	70.4	58.9	54.4
82.5°	65.5	67.9	67.1	65.9	53.6	49.1
83°	61.0	63.0	62.2	61.4	48.7	43.4
83.5°	56.0	58.5	57.7	56.9	43.4	37.6
84°	51.1	53.6	53.2	52.0	38.0	31.9
84.5°	46.2	48.7	48.3	47.5	33.1	26.2
85°	41.3	43.8	43.4	43.4	28.6	20.9
85.5°	36.4	38.9	38.5	38.9	25.0	16.0
86°	31.1	34.0	33.5	34.4	21.7	13.9
86.5°	26.2	28.6	28.2	29.9	18.8	11.9
87°	21.3	23.7	23.3	25.0	15.5	9.8
87.5°	16.0	18.4	18.0	20.5	12.7	7.4
88°	11.0	13.5	13.1	15.5	9.8	5.3
88.5°	6.5	10.2	9.8	11.9	7.0	3.7



TEST NUMBER: P776259
CATALOG NUMBER: HCDJBL3040CSD-HCD41TRMW-4000lm-5000K

CANDELA DISTRIBUTION (continued):

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



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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°	2083.5	2094.1	2107.6	2120.7	2130.1	2136.7	2129.3	2126.9	2120.7	2109.3	2094.1
22°	2072.9	2084.3	2097.8	2110.9	2120.3	2127.3	2119.5	2117.4	2111.3	2099.4	2083.9



44°	1276.4	1304.2	1340.2	1372.1	1380.3	1395.4	1368.0	1363.1	1351.2	1341.0	1313.2
44.5°	1245.3	1273.9	1309.5	1340.6	1347.9	1365.9	1338.1	1332.8	1319.3	1309.9	1282.9



66.5°	191.5	193.1	197.6	200.9	198.4	201.7	193.1	194.3	191.0	198.0	197.6
67°	182.9	184.1	187.8	189.8	187.4	190.6	182.9	184.1	180.0	187.8	188.2



89°	2.0	2.5	4.1	4.5	0.8	1.2	0.0	0.4	0.4	1.2	2.5
89.5°	0.4	0.4	0.4	0.4	0.0	0.0	0.0	0.4	0.0	0.4	0.0

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21.5°	2078.6	2072.0	2065.1	2073.7	2076.5	2083.5
22°	2068.4	2061.4	2054.4	2063.0	2065.9	2072.9



44°	1274.7	1258.0	1239.5	1267.4	1265.7	1276.4
44.5°	1245.7	1228.5	1208.5	1235.9	1234.2	1245.3



66.5°	193.5	194.3	195.5	204.1	199.2	191.5
67°	184.9	185.7	186.5	194.7	190.2	182.9

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Scaled Data Report



89°	2.9	7.0	6.5	8.2	4.1	2.0
89.5°	0.0	3.7	3.7	4.5	1.6	0.4

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Scaled Data Report



(END OF REPORT)