

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: P776247

Luminaire Tested: HCDJBL3040CSD-HCD41TRH-HCD41TRLWW-4000lm-3500K

Issue Date: 2/13/2024

Test Information

Test Method: LM-79-2019
Report Number: P776247
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (A2312156B034)
Test Lab:
Issue Date: 2/13/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: HALO COMMERCIAL
Catalog Number: HCDJBS3040CSD-HCD41TRH-HCD41TRLWW-4000lm-3500K
Description: 4 INCH ROUND SHALLOW-WIDE LENSED WALLWASH KIT
Light Source: SELECTABLE LUMENS AND CCT ARRAY 90CRI / 3500K CCT
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 4757.8 lumens
Efficiency: N/A
Efficacy: 123.6 lumens/watt
Spacing Criteria (0/90/45): 1.16 / 1.14 / 1.22
Luminous Opening: Circular (Dia: 0.33' x H: 0')
CIE Type: Direct

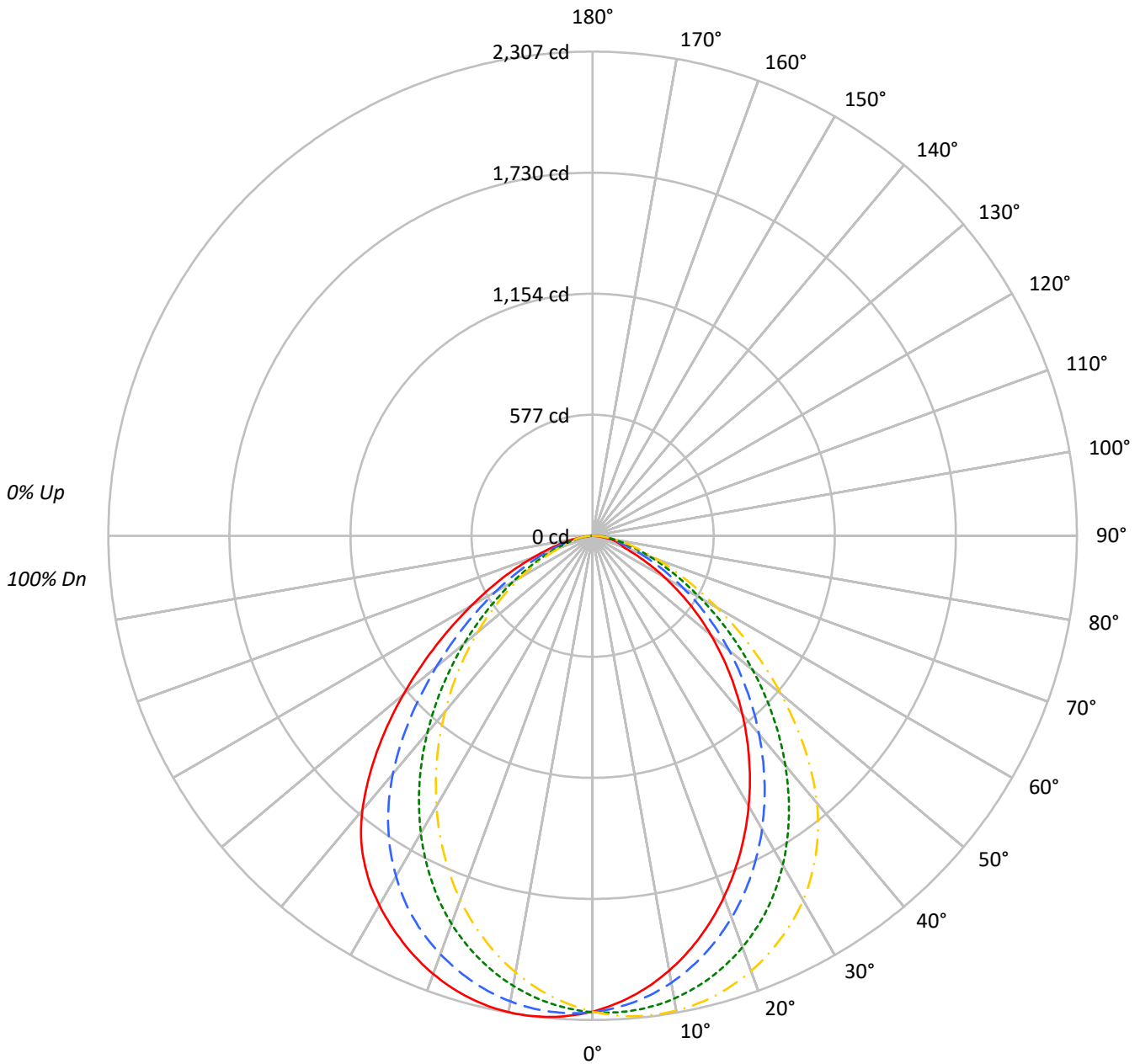
Input Watts (W): 38.5
Input Voltage (V): NR
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT



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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									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	110	106	103	99	108	104	101	98	100	97	95	96	94	92	93	91	89	87																			
2	102	95	89	84	99	93	87	83	89	85	81	86	82	79	83	80	77	75																			
3	94	84	77	71	91	83	76	71	80	74	70	77	72	68	75	71	67	65																			
4	87	76	68	62	84	74	67	61	72	66	61	70	64	60	68	63	59	57																			
5	80	68	60	54	78	67	60	54	65	59	53	63	57	53	62	56	52	50																			
6	74	62	54	48	73	61	53	48	59	53	47	58	52	47	56	51	47	45																			
7	69	57	49	43	68	56	48	43	54	48	42	53	47	42	52	46	42	40																			
8	65	52	44	39	63	51	44	39	50	43	38	49	43	38	48	42	38	36																			
9	61	48	40	35	59	47	40	35	46	40	35	45	39	35	44	39	35	33																			
10	57	45	37	32	56	44	37	32	43	36	32	42	36	32	41	36	32	30																			

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°	270°
0°	285402	285402	285402	285402
5°	277952	286745	290712	282778
10°	268822	286150	294533	278227
15°	257816	283718	296825	271849
20°	245206	279384	297545	263367
25°	231160	272901	296855	251975
30°	216031	263231	295244	237814
35°	199678	250378	291490	220880
40°	182242	234681	280139	201184
45°	163669	216101	258425	179385
50°	143923	195004	230422	156532
55°	122564	172195	199599	132766
60°	99371	148905	168412	110270
65°	75787	127035	139602	90110
70°	57365	107518	109873	71973
75°	60100	89907	86211	57426
80°	55008	78634	61385	44064
85°	27580	79851	17183	23537

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 67.5°
 Vertical Angle: 89.5°
 Luminance: 292757 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	213.5	4.5
10°-20°	599.8	12.6
20°-30°	872.2	18.3
30°-40°	976.9	20.5
40°-50°	883.8	18.6
50°-60°	641.9	13.5
60°-70°	367.2	7.7
70°-80°	163.0	3.4
80°-90°	39.5	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°	1685.5	35.4
0°-40°	2662.4	56.0
0°-60°	4188.1	88.0
0°-90°	4757.8	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4757.8	100.0

CANDELA DISTRIBUTION:

	0°	90°	180°	270°	360°	Flux
0°	2268	2268	2268	2268	2268	
5°	2200	2270	2301	2238	2200	207
15°	1979	2178	2278	2086	1979	556
25°	1665	1965	2138	1815	1665	765
35°	1300	1630	1897	1438	1300	811
45°	920	1214	1452	1008	920	709
55°	559	785	910	605	559	500
65°	254	427	469	303	254	257
75°	124	185	177	118	124	127
85°	19	55	12	16	19	30
90°	0	12	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°	2267.8	2267.8	2267.8	2267.8	2267.8	2267.8	2267.8	2267.8	2267.8	2267.8	2267.8
0.5°	2261.5	2267.0	2267.0	2266.6	2271.0	2271.0	2271.4	2271.4	2271.4	2274.6	2271.4
1°	2255.5	2262.7	2264.3	2265.8	2272.2	2273.8	2275.4	2276.2	2275.8	2277.8	2273.4
1.5°	2249.9	2258.3	2261.1	2264.7	2272.6	2276.6	2279.4	2280.6	2280.2	2281.0	2275.0
2°	2243.6	2253.1	2257.9	2263.1	2273.4	2278.6	2282.9	2284.9	2284.1	2283.7	2276.2
2.5°	2237.2	2248.0	2254.3	2261.5	2273.4	2280.6	2286.1	2288.5	2287.7	2286.1	2277.0
3°	2230.1	2242.4	2250.3	2259.5	2273.4	2282.1	2288.9	2292.1	2291.3	2288.1	2277.4
3.5°	2223.3	2236.4	2246.0	2257.1	2273.0	2283.7	2291.7	2295.3	2294.1	2290.1	2277.8
4°	2215.7	2230.5	2241.6	2254.3	2272.2	2284.9	2294.1	2298.0	2296.9	2291.3	2277.4
4.5°	2208.2	2224.1	2236.4	2251.5	2271.0	2285.7	2296.1	2300.8	2299.2	2292.5	2277.0
5°	2200.2	2216.9	2231.3	2248.3	2269.8	2286.1	2297.7	2303.2	2301.2	2293.3	2276.6
5.5°	2191.9	2210.2	2225.7	2244.8	2268.2	2286.1	2298.8	2304.8	2302.8	2294.1	2275.4
6°	2183.1	2202.6	2219.7	2240.8	2266.2	2285.7	2300.0	2306.8	2304.4	2294.1	2274.2
6.5°	2174.4	2195.1	2213.8	2236.4	2263.9	2285.3	2300.8	2308.0	2305.6	2294.1	2272.6
7°	2165.3	2187.1	2207.4	2232.0	2261.1	2284.5	2301.2	2308.8	2306.4	2293.7	2270.6
7.5°	2155.7	2178.8	2200.6	2227.3	2258.3	2283.7	2301.2	2309.6	2306.8	2292.9	2268.6
8°	2145.8	2170.0	2193.5	2222.1	2255.1	2282.1	2301.2	2310.0	2307.2	2292.1	2265.8
8.5°	2135.8	2160.9	2185.9	2216.5	2251.5	2280.2	2300.8	2310.0	2306.8	2290.9	2263.1
9°	2125.5	2151.7	2178.4	2211.0	2248.0	2278.2	2299.6	2310.0	2306.4	2288.9	2260.3
9.5°	2114.4	2142.2	2170.4	2204.6	2243.6	2275.8	2298.8	2309.2	2306.0	2287.3	2256.7
10°	2103.6	2132.3	2162.1	2198.3	2239.2	2273.4	2297.3	2308.4	2304.8	2284.9	2253.1
10.5°	2092.1	2121.9	2153.3	2191.5	2234.0	2270.2	2295.7	2307.2	2303.6	2282.5	2249.1
11°	2081.0	2112.0	2144.6	2184.7	2228.9	2267.0	2293.7	2305.6	2301.6	2279.8	2244.8
11.5°	2068.6	2100.8	2135.4	2177.6	2223.7	2263.5	2291.3	2304.0	2300.0	2276.6	2240.4
12°	2056.7	2090.5	2125.9	2169.6	2218.1	2259.5	2288.9	2302.0	2297.7	2273.4	2235.6
12.5°	2044.4	2079.0	2116.0	2162.1	2212.2	2255.5	2285.7	2299.6	2295.3	2269.8	2230.5
13°	2031.7	2067.4	2106.0	2153.7	2205.8	2251.1	2282.5	2296.9	2292.5	2265.8	2225.3
13.5°	2018.9	2055.5	2095.7	2145.0	2199.4	2246.4	2279.4	2293.7	2289.3	2261.5	2219.3
14°	2005.8	2043.6	2084.9	2136.2	2192.3	2241.2	2275.4	2290.5	2285.7	2257.1	2213.4
14.5°	1992.3	2031.3	2073.8	2127.1	2185.1	2235.6	2271.4	2286.9	2281.7	2252.3	2207.0
15°	1978.8	2018.9	2063.1	2117.9	2177.6	2230.1	2267.0	2283.3	2278.2	2247.2	2201.0
15.5°	1964.9	2005.4	2051.1	2108.0	2169.6	2224.1	2262.3	2279.0	2273.8	2241.6	2193.9
16°	1951.0	1992.7	2039.6	2098.1	2161.3	2217.7	2257.1	2274.6	2269.0	2236.0	2186.7
16.5°	1936.2	1979.6	2027.3	2088.1	2153.3	2211.4	2251.9	2269.8	2263.9	2230.1	2179.6
17°	1921.9	1966.1	2015.4	2077.8	2144.6	2204.6	2246.4	2265.0	2259.1	2223.7	2172.0
17.5°	1907.2	1952.1	2002.6	2066.7	2135.4	2197.5	2240.4	2259.5	2253.5	2216.9	2164.1
18°	1892.5	1938.2	1989.9	2055.5	2126.3	2189.9	2234.4	2253.9	2247.6	2210.6	2156.1
18.5°	1877.0	1923.9	1976.8	2044.0	2116.7	2182.4	2228.1	2248.0	2241.6	2203.4	2147.4
19°	1861.5	1909.2	1963.7	2032.1	2106.8	2174.4	2221.3	2242.0	2235.2	2195.9	2139.0
19.5°	1846.4	1894.5	1949.8	2020.1	2096.9	2166.0	2214.2	2235.2	2228.5	2188.3	2130.3
20°	1830.9	1879.8	1936.2	2008.2	2086.1	2157.7	2207.0	2228.5	2221.7	2180.8	2121.1
20.5°	1814.6	1864.7	1922.3	1995.5	2075.4	2149.0	2199.4	2221.7	2214.6	2172.4	2111.6
21°	1798.7	1849.2	1908.0	1982.8	2064.3	2139.8	2191.5	2214.2	2207.0	2164.1	2102.0



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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°	1749.4	1802.3	1863.9	1942.6	2029.3	2110.8	2166.4	2190.7	2183.1	2137.4	2071.4
23°	1733.1	1786.4	1848.8	1929.1	2017.4	2100.4	2157.7	2182.4	2174.4	2128.3	2060.7
23.5°	1716.0	1769.7	1833.3	1914.8	2004.6	2089.7	2148.6	2174.0	2166.0	2118.7	2050.0
24°	1698.9	1754.2	1817.8	1900.1	1991.9	2079.4	2139.0	2164.9	2156.9	2108.8	2038.4
24.5°	1681.8	1737.5	1801.9	1885.4	1978.8	2067.8	2129.5	2155.7	2147.8	2098.9	2026.5
25°	1664.7	1720.4	1785.6	1870.6	1965.3	2056.7	2119.5	2146.6	2137.8	2088.9	2014.6
25.5°	1647.2	1703.7	1769.3	1855.1	1951.4	2044.8	2109.6	2136.6	2128.3	2078.6	2002.2
26°	1630.1	1687.0	1752.2	1839.6	1937.4	2032.5	2099.3	2127.1	2118.7	2067.8	1989.5
26.5°	1612.2	1669.9	1735.9	1823.3	1922.7	2020.1	2088.5	2117.1	2108.4	2056.7	1976.4
27°	1594.7	1652.4	1719.2	1807.8	1907.6	2007.8	2077.8	2107.2	2098.1	2045.6	1962.5
27.5°	1576.8	1634.9	1702.1	1791.5	1892.5	1994.3	2066.7	2096.9	2087.7	2034.4	1948.6
28°	1558.9	1617.4	1684.2	1774.4	1877.0	1980.8	2055.1	2085.7	2076.6	2022.9	1934.3
28.5°	1541.0	1599.9	1667.5	1757.3	1861.1	1966.9	2042.8	2075.4	2065.9	2010.2	1919.1
29°	1522.8	1582.0	1650.0	1739.8	1844.8	1952.9	2030.9	2064.3	2054.7	1997.9	1904.0
29.5°	1504.5	1564.1	1632.5	1722.7	1828.1	1937.8	2018.1	2053.1	2043.6	1984.7	1888.9
30°	1486.6	1546.2	1613.4	1705.2	1811.4	1922.7	2005.4	2041.6	2031.7	1971.6	1873.4
30.5°	1467.9	1528.3	1595.9	1687.0	1794.7	1906.8	1991.9	2029.7	2020.1	1957.7	1857.1
31°	1449.2	1509.6	1577.6	1669.1	1777.2	1890.9	1978.0	2017.4	2008.2	1943.4	1840.8
31.5°	1430.9	1491.7	1559.3	1650.8	1759.3	1874.6	1964.1	2005.0	1996.3	1929.1	1824.5
32°	1412.6	1473.1	1540.2	1632.1	1741.4	1858.7	1949.4	1992.3	1983.6	1914.4	1807.4
32.5°	1393.9	1454.4	1522.0	1614.2	1723.5	1841.6	1933.9	1978.8	1971.2	1898.9	1790.3
33°	1375.3	1436.1	1502.9	1594.7	1705.2	1824.9	1918.4	1964.9	1957.7	1883.0	1772.4
33.5°	1356.6	1417.4	1484.6	1576.0	1686.6	1807.4	1902.4	1951.0	1943.0	1866.7	1754.5
34°	1337.9	1398.7	1465.1	1557.3	1667.9	1789.9	1886.5	1936.2	1927.5	1851.2	1735.9
34.5°	1318.8	1380.0	1446.4	1538.3	1648.4	1772.0	1870.2	1921.1	1912.4	1833.7	1717.2
35°	1299.7	1360.9	1426.9	1518.8	1629.7	1753.8	1853.5	1905.2	1897.3	1816.6	1698.1
35.5°	1281.0	1342.3	1407.9	1498.9	1610.2	1735.5	1836.5	1889.7	1882.2	1798.7	1677.8
36°	1261.9	1323.2	1388.4	1479.4	1590.7	1716.8	1819.0	1873.0	1865.9	1780.4	1657.9
36.5°	1243.3	1304.5	1369.7	1459.9	1571.3	1697.3	1801.1	1856.7	1848.8	1760.1	1636.9
37°	1223.8	1285.4	1350.6	1440.5	1551.4	1677.8	1782.8	1839.2	1830.9	1740.2	1615.8
37.5°	1205.1	1265.9	1330.3	1420.6	1530.7	1658.3	1763.7	1821.7	1812.6	1719.6	1594.3
38°	1185.6	1246.8	1311.2	1400.3	1510.4	1638.1	1744.2	1803.1	1792.3	1698.1	1572.5
38.5°	1167.3	1228.1	1291.4	1380.4	1490.2	1617.4	1724.7	1783.6	1772.0	1675.8	1550.2
39°	1148.2	1208.7	1271.9	1359.7	1469.5	1597.5	1704.5	1762.5	1751.0	1653.2	1526.7
39.5°	1128.7	1190.0	1252.4	1340.7	1448.8	1576.4	1684.2	1741.0	1727.9	1629.7	1503.7
40°	1109.3	1170.9	1232.9	1320.4	1428.5	1555.4	1662.3	1718.4	1705.2	1605.9	1479.8
40.5°	1091.0	1151.8	1213.4	1299.7	1407.1	1533.5	1640.4	1696.1	1681.8	1581.2	1455.6
41°	1071.1	1132.7	1193.6	1279.4	1386.0	1512.0	1617.4	1672.2	1657.9	1556.2	1431.3
41.5°	1052.4	1113.6	1174.5	1259.6	1364.9	1490.2	1595.5	1649.2	1633.3	1530.7	1407.1
42°	1033.3	1094.2	1155.0	1238.9	1343.4	1467.5	1571.7	1624.5	1608.2	1504.9	1382.0
42.5°	1014.6	1075.5	1135.1	1218.6	1322.0	1445.2	1548.2	1601.1	1583.2	1479.4	1357.0
43°	995.6	1056.4	1115.6	1198.7	1300.9	1423.0	1523.9	1576.0	1557.7	1452.0	1331.5
43.5°	976.9	1037.7	1096.1	1178.4	1279.4	1399.9	1500.1	1551.0	1531.5	1425.3	1306.1



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
45°	919.6	980.8	1038.1	1117.6	1214.2	1329.5	1425.7	1473.9	1452.0	1344.2	1228.1
45.5°	901.7	961.8	1018.6	1096.9	1192.8	1306.1	1401.1	1448.0	1424.9	1317.2	1202.3
46°	882.6	943.1	999.5	1076.7	1170.9	1281.8	1375.3	1421.8	1397.9	1290.2	1175.7
46.5°	864.0	924.8	980.4	1056.8	1148.6	1258.4	1350.2	1395.1	1370.1	1262.7	1149.8
47°	845.3	905.7	961.4	1036.5	1126.8	1234.1	1324.8	1368.1	1342.6	1235.3	1123.6
47.5°	827.0	887.0	942.3	1016.6	1104.9	1210.3	1298.9	1341.1	1314.8	1208.3	1098.1
48°	808.3	868.3	923.2	996.4	1083.4	1186.4	1273.1	1314.4	1287.4	1181.2	1072.3
48.5°	790.0	850.0	904.1	976.5	1061.6	1162.1	1247.6	1287.8	1260.0	1154.6	1046.8
49°	771.7	831.8	885.4	956.6	1039.7	1138.3	1221.8	1260.3	1231.7	1127.2	1021.8
49.5°	753.8	813.1	867.1	937.1	1017.8	1114.4	1195.9	1233.3	1204.3	1100.9	996.7
50°	735.1	795.2	848.1	917.6	996.0	1090.6	1170.1	1205.9	1176.9	1073.9	971.7
50.5°	717.2	776.9	829.4	897.4	974.5	1066.7	1144.7	1178.4	1149.0	1048.0	946.7
51°	699.4	758.6	811.1	877.5	952.6	1042.5	1118.8	1151.8	1122.0	1021.8	922.8
51.5°	681.5	740.3	792.8	858.4	931.1	1019.4	1093.4	1124.8	1094.2	995.6	898.5
52°	664.0	722.4	774.9	839.3	910.1	995.6	1068.3	1097.7	1067.1	970.1	874.7
52.5°	646.5	704.5	756.6	820.2	889.0	972.1	1042.5	1070.3	1040.1	944.7	851.2
53°	628.6	687.0	738.3	800.3	867.9	948.6	1017.0	1043.7	1013.8	919.6	827.8
53.5°	610.3	668.7	720.4	781.7	846.5	926.0	992.0	1017.0	987.2	894.2	804.7
54°	593.2	651.6	702.9	762.6	825.8	902.5	966.9	990.8	960.2	869.9	782.1
54.5°	575.7	633.8	685.0	743.5	805.5	880.3	942.7	963.7	934.7	845.7	759.8
55°	558.6	617.1	667.5	725.2	784.8	858.0	918.4	939.1	909.7	821.8	737.9
55.5°	541.5	599.6	650.1	706.5	764.6	835.7	893.8	912.5	883.4	798.0	715.3
56°	524.4	582.9	633.0	687.8	743.9	813.1	869.1	887.0	858.4	774.1	694.2
56.5°	507.3	565.8	615.9	669.5	724.4	791.2	845.3	861.6	833.3	751.0	673.5
57°	490.6	549.1	598.8	651.6	704.9	769.7	821.8	836.5	808.7	728.4	652.4
57.5°	474.3	532.4	581.7	633.4	685.4	748.7	798.8	811.9	784.4	706.1	632.2
58°	457.6	516.1	565.0	615.5	666.0	727.2	775.3	787.6	761.0	684.2	612.3
58.5°	441.7	499.8	548.7	598.0	647.3	706.5	752.6	763.8	737.1	662.0	592.4
59°	425.8	484.3	532.4	580.9	628.2	685.8	730.0	740.3	713.7	640.9	573.3
59.5°	409.9	468.0	515.3	563.8	609.9	665.6	707.7	717.2	691.0	619.8	554.2
60°	394.8	452.5	499.4	547.1	591.6	645.3	685.8	694.6	669.1	599.6	535.5
60.5°	379.3	436.5	483.1	530.0	573.7	625.8	664.0	671.9	646.5	579.3	516.9
61°	364.2	421.4	467.6	513.7	556.2	606.3	642.9	650.1	625.4	559.4	499.4
61.5°	349.5	406.3	451.7	497.4	539.5	587.2	622.2	628.6	603.9	539.9	481.9
62°	335.2	391.6	436.9	481.9	522.0	568.5	601.5	607.5	584.1	521.6	464.8
62.5°	320.5	376.9	421.8	466.0	505.7	549.9	581.3	586.4	563.4	502.5	447.7
63°	306.9	362.6	407.1	450.9	489.0	531.6	561.4	566.2	543.1	484.3	431.4
63.5°	293.4	348.3	392.4	436.2	473.1	513.7	541.9	546.3	524.0	466.4	415.1
64°	280.3	334.0	378.9	421.4	457.2	496.2	522.8	527.2	504.9	450.1	399.6
64.5°	266.8	320.1	364.6	406.7	442.1	479.1	504.1	508.1	486.2	432.6	384.5
65°	254.5	306.9	351.1	392.8	426.6	462.4	486.2	489.4	468.8	416.3	369.8
65.5°	241.7	293.8	337.6	379.3	411.9	445.7	468.4	471.5	450.5	399.6	355.0
66°	229.4	280.7	324.8	365.8	397.6	429.4	450.9	453.6	431.8	384.1	341.1



TEST NUMBER: P776247

CATALOG NUMBER: HCDJBL3040CSD-HCD41TRH-HCD41TRLWW-4000lm-3500K

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
67.5°	196.0	243.3	286.7	326.0	356.2	383.3	401.6	403.2	378.9	339.5	300.2
68°	186.1	231.8	275.1	313.7	343.5	368.2	385.3	386.5	362.2	324.8	287.9
68.5°	176.9	220.3	263.2	301.4	330.8	353.9	370.2	370.6	346.3	310.1	275.5
69°	168.2	209.1	251.7	289.4	317.7	340.3	355.4	355.4	330.4	295.4	263.6
69.5°	160.6	198.4	240.5	277.5	304.9	326.8	341.5	340.7	314.5	281.5	252.1
70°	155.9	188.1	229.4	266.0	292.2	313.7	327.6	326.0	298.6	268.4	240.5
70.5°	153.1	178.1	219.1	254.5	279.9	300.2	313.7	311.7	285.1	255.3	229.8
71°	150.3	169.4	208.7	243.7	268.4	287.5	299.8	297.0	271.6	242.9	219.1
71.5°	147.5	161.0	199.2	232.6	256.8	275.1	287.1	283.1	257.6	231.0	208.7
72°	144.7	154.3	189.6	222.3	245.7	263.6	274.3	270.0	244.9	219.5	198.8
72.5°	141.1	149.5	180.5	212.3	235.0	251.7	262.0	257.2	232.6	208.3	188.9
73°	137.6	145.9	172.2	202.4	224.2	240.5	250.9	244.9	220.7	197.2	179.3
73.5°	134.4	142.7	163.8	192.8	213.9	229.4	238.9	233.0	209.1	186.5	170.2
74°	130.8	139.6	156.3	183.7	204.0	219.5	227.8	221.5	198.4	176.1	161.0
74.5°	127.6	136.8	148.7	174.9	194.4	209.1	217.1	210.3	187.7	166.2	152.3
75°	123.6	133.6	141.9	166.6	184.9	199.2	207.1	199.6	177.3	156.6	143.9
75.5°	119.7	130.4	137.2	158.2	175.7	189.3	196.4	189.3	167.4	147.1	135.6
76°	115.3	126.8	132.4	150.7	167.4	180.1	186.9	178.9	157.4	138.0	127.2
76.5°	110.5	122.9	127.6	143.1	158.6	171.4	177.3	169.0	148.3	128.8	119.3
77°	106.2	118.9	122.5	136.8	150.7	162.6	168.2	159.0	138.8	120.1	111.7
77.5°	101.4	114.9	118.9	130.8	143.1	154.3	159.0	149.9	129.6	111.3	104.2
78°	96.6	110.5	115.7	124.8	135.6	145.9	150.3	140.7	120.5	103.0	96.2
78.5°	91.4	106.6	112.5	118.9	128.4	138.4	141.9	132.0	111.3	94.6	89.1
79°	86.3	101.8	108.9	112.9	121.7	130.8	133.6	123.3	102.2	86.3	81.9
79.5°	81.1	97.4	105.4	107.7	114.9	123.6	125.6	114.5	93.4	78.3	74.7
80°	75.9	92.6	101.4	102.6	108.5	116.5	118.1	106.2	84.7	70.8	68.0
80.5°	70.4	87.9	97.4	98.2	102.6	109.7	110.5	98.6	75.9	62.8	61.6
81°	64.8	82.7	93.4	93.8	96.6	103.0	103.0	90.3	67.2	55.7	55.3
81.5°	59.2	77.9	89.1	89.5	91.0	96.6	95.8	82.7	58.4	48.5	48.9
82°	53.7	72.4	84.7	85.1	85.5	90.3	88.3	75.1	49.7	42.5	42.9
82.5°	48.1	67.2	80.3	81.1	80.3	84.3	81.1	68.0	42.9	37.0	37.8
83°	41.7	61.6	75.9	76.7	75.1	77.9	74.3	60.8	35.8	31.4	32.6
83.5°	35.8	56.1	71.2	73.2	70.0	72.0	67.6	54.5	28.6	25.8	27.4
84°	29.8	50.5	66.8	69.2	64.8	66.0	61.2	47.7	21.9	20.3	22.3
84.5°	24.3	44.9	62.0	65.2	60.0	60.4	55.3	42.1	14.7	16.3	17.5
85°	19.1	39.4	57.6	61.2	55.3	54.9	49.3	36.6	11.9	12.7	12.7
85.5°	15.5	34.2	53.3	57.3	50.9	49.7	43.7	31.4	9.5	9.1	9.1
86°	13.5	29.8	48.9	52.9	46.5	44.5	39.0	25.8	8.0	6.0	5.6
86.5°	11.1	26.2	44.5	48.5	42.1	39.8	33.8	20.3	6.4	3.2	3.2
87°	9.1	23.1	40.2	43.7	38.2	35.0	28.6	15.9	4.8	1.6	1.2
87.5°	7.2	19.9	35.4	39.4	33.8	30.2	23.5	11.5	4.0	0.8	0.0
88°	5.2	16.7	31.0	34.6	29.4	25.4	18.3	8.0	2.4	0.4	0.0
88.5°	3.2	13.5	26.2	30.2	25.4	20.7	13.9	4.8	1.2	0.0	0.0



TEST NUMBER: P776247

CATALOG NUMBER: HCDJBL3040CSD-HCD41TRH-HCD41TRLWW-4000lm-3500K

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
90°	0.0	4.4	13.1	15.1	11.9	8.7	3.2	0.4	0.0	0.0	0.0



TEST NUMBER: P776247

CATALOG NUMBER: HCDJBL3040CSD-HCD41TRH-HCD41TRLWW-4000lm-3500K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
0°	2267.8	2267.8	2267.8	2267.8	2267.8	2267.8
0.5°	2267.0	2267.8	2264.3	2261.9	2261.1	2261.5
1°	2267.0	2265.8	2260.7	2256.7	2255.1	2255.5
1.5°	2266.6	2263.5	2256.3	2251.1	2249.1	2249.9
2°	2265.8	2260.7	2251.9	2245.6	2242.8	2243.6
2.5°	2264.7	2257.9	2247.2	2240.0	2236.4	2237.2
3°	2263.5	2254.7	2242.0	2233.2	2229.7	2230.1
3.5°	2261.5	2251.1	2236.8	2226.9	2222.5	2223.3
4°	2259.9	2247.2	2231.3	2219.7	2214.6	2215.7
4.5°	2257.5	2243.2	2224.9	2212.6	2206.6	2208.2
5°	2254.7	2238.4	2218.9	2205.0	2198.7	2200.2
5.5°	2251.9	2233.6	2212.2	2197.1	2190.3	2191.9
6°	2248.7	2228.9	2205.0	2188.7	2181.6	2183.1
6.5°	2245.2	2223.3	2198.3	2180.4	2172.4	2174.4
7°	2241.2	2217.7	2190.7	2171.6	2162.9	2165.3
7.5°	2237.2	2211.8	2182.7	2162.5	2153.3	2155.7
8°	2232.8	2205.4	2174.8	2152.9	2143.0	2145.8
8.5°	2228.1	2199.0	2166.0	2143.4	2132.7	2135.8
9°	2223.3	2191.9	2157.7	2133.4	2122.3	2125.5
9.5°	2217.7	2184.7	2148.2	2123.1	2111.2	2114.4
10°	2212.2	2177.2	2139.0	2112.4	2100.0	2103.6
10.5°	2206.6	2169.6	2129.5	2101.6	2088.9	2092.1
11°	2200.2	2161.3	2119.5	2090.5	2077.0	2081.0
11.5°	2193.9	2153.3	2109.6	2079.4	2065.1	2068.6
12°	2187.1	2144.2	2098.9	2067.4	2052.7	2056.7
12.5°	2180.4	2135.4	2088.1	2055.1	2040.4	2044.4
13°	2172.8	2126.3	2077.0	2043.2	2027.7	2031.7
13.5°	2165.3	2116.7	2065.9	2030.5	2014.2	2018.9
14°	2157.3	2106.8	2053.9	2017.7	2001.4	2005.8
14.5°	2149.4	2096.9	2042.4	2004.6	1987.9	1992.3
15°	2141.0	2086.5	2030.1	1991.5	1974.0	1978.8
15.5°	2132.3	2075.4	2017.4	1977.6	1960.1	1964.9
16°	2123.1	2064.7	2004.6	1964.1	1945.8	1951.0
16.5°	2114.0	2053.9	1991.9	1950.2	1931.5	1936.2
17°	2104.4	2042.0	1978.8	1935.8	1916.4	1921.9
17.5°	2094.9	2030.1	1964.9	1921.1	1901.3	1907.2
18°	2084.5	2018.1	1951.4	1906.4	1886.5	1892.5
18.5°	2074.6	2005.8	1937.0	1891.3	1871.0	1877.0
19°	2063.9	1993.1	1922.7	1876.2	1855.5	1861.5
19.5°	2053.1	1980.4	1908.0	1860.3	1839.6	1846.4
20°	2042.0	1966.5	1892.9	1844.8	1824.1	1830.9
20.5°	2030.5	1952.9	1877.8	1828.9	1808.2	1814.6
21°	2018.1	1938.6	1862.3	1812.6	1791.9	1798.7

TEST NUMBER: P776247

CATALOG NUMBER: HCDJBL3040CSD-HCD41TRH-HCD41TRLWW-4000lm-3500K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
22.5°	1981.2	1895.3	1813.8	1762.5	1741.8	1749.4
23°	1967.7	1879.4	1797.1	1745.4	1725.1	1733.1
23.5°	1954.1	1864.3	1780.0	1727.9	1708.0	1716.0
24°	1939.8	1848.0	1762.9	1710.4	1690.5	1698.9
24.5°	1925.9	1831.7	1745.4	1692.5	1673.0	1681.8
25°	1910.8	1814.6	1727.5	1674.6	1655.2	1664.7
25.5°	1896.1	1798.3	1710.0	1656.7	1637.7	1647.2
26°	1880.2	1781.6	1691.3	1638.5	1619.8	1630.1
26.5°	1864.7	1764.5	1673.8	1619.8	1601.5	1612.2
27°	1848.8	1746.2	1654.8	1601.5	1583.6	1594.7
27.5°	1832.5	1728.7	1636.5	1582.8	1565.3	1576.8
28°	1815.8	1710.4	1617.0	1563.7	1546.6	1558.9
28.5°	1799.5	1692.5	1598.7	1545.0	1527.9	1541.0
29°	1782.0	1674.2	1579.2	1525.9	1509.6	1522.8
29.5°	1764.5	1655.5	1560.5	1506.9	1490.9	1504.5
30°	1747.4	1636.5	1540.6	1487.8	1472.3	1486.6
30.5°	1729.9	1617.4	1521.2	1468.3	1453.2	1467.9
31°	1711.6	1598.3	1501.3	1448.8	1434.5	1449.2
31.5°	1692.9	1578.8	1481.8	1429.3	1415.4	1430.9
32°	1674.2	1558.9	1461.9	1409.4	1396.3	1412.6
32.5°	1655.2	1539.5	1441.6	1390.8	1376.8	1393.9
33°	1636.1	1519.6	1421.8	1370.5	1358.2	1375.3
33.5°	1616.2	1499.7	1401.9	1351.0	1338.7	1356.6
34°	1596.3	1479.0	1382.0	1330.7	1319.6	1337.9
34.5°	1576.4	1458.3	1361.7	1310.8	1300.5	1318.8
35°	1556.2	1437.7	1340.7	1291.4	1281.0	1299.7
35.5°	1535.1	1417.4	1320.4	1271.5	1261.9	1281.0
36°	1514.0	1396.7	1300.5	1251.6	1242.5	1261.9
36.5°	1492.9	1375.3	1280.2	1232.1	1223.4	1243.3
37°	1471.1	1353.8	1259.6	1211.8	1204.3	1223.8
37.5°	1449.2	1332.7	1238.9	1192.0	1184.8	1205.1
38°	1426.5	1311.2	1218.2	1172.1	1165.3	1185.6
38.5°	1405.5	1289.8	1197.9	1152.6	1146.2	1167.3
39°	1382.4	1268.3	1177.7	1132.7	1127.2	1148.2
39.5°	1359.3	1246.4	1157.0	1113.6	1108.1	1128.7
40°	1336.7	1224.6	1136.3	1093.4	1088.2	1109.3
40.5°	1313.6	1202.7	1115.6	1073.9	1069.5	1091.0
41°	1290.6	1181.2	1095.3	1054.0	1050.4	1071.1
41.5°	1267.5	1159.4	1074.7	1034.9	1031.3	1052.4
42°	1244.4	1137.9	1054.4	1015.8	1011.9	1033.3
42.5°	1221.4	1116.4	1034.1	996.0	993.6	1014.6
43°	1197.1	1094.6	1014.2	976.9	974.9	995.6
43.5°	1173.7	1072.7	993.6	957.4	955.4	976.9



TEST NUMBER: P776247

CATALOG NUMBER: HCDJBL3040CSD-HCD41TRH-HCD41TRLWW-4000lm-3500K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
45°	1102.9	1007.9	933.9	900.5	899.3	919.6
45.5°	1079.8	987.2	914.4	881.4	880.7	901.7
46°	1055.6	966.1	895.0	863.2	862.4	882.6
46.5°	1032.5	944.7	875.5	844.5	843.7	864.0
47°	1008.7	923.6	855.6	826.2	825.8	845.3
47.5°	985.2	902.5	836.1	807.5	807.5	827.0
48°	961.8	881.8	817.0	788.8	789.2	808.3
48.5°	938.7	860.8	797.6	770.9	770.9	790.0
49°	916.0	840.5	779.3	753.0	753.0	771.7
49.5°	893.0	820.2	760.2	734.3	735.5	753.8
50°	869.5	799.5	741.1	716.5	718.0	735.1
50.5°	846.9	779.3	722.4	699.0	699.8	717.2
51°	825.4	759.0	704.5	681.5	682.3	699.4
51.5°	802.7	739.1	686.6	663.2	665.2	681.5
52°	780.9	719.6	668.3	646.9	648.1	664.0
52.5°	759.0	700.1	650.5	629.4	631.0	646.5
53°	737.9	680.3	633.4	612.3	613.9	628.6
53.5°	716.5	661.6	615.9	595.2	596.8	610.3
54°	696.6	642.1	598.8	578.9	580.1	593.2
54.5°	675.9	623.8	582.1	562.6	563.8	575.7
55°	655.6	605.1	565.4	546.3	547.5	558.6
55.5°	635.3	587.6	549.1	530.4	531.2	541.5
56°	616.3	569.3	532.8	514.9	514.9	524.4
56.5°	597.2	552.6	517.3	499.4	499.0	507.3
57°	578.5	534.8	501.4	483.9	483.1	490.6
57.5°	560.2	518.1	485.9	468.8	467.2	474.3
58°	541.9	501.4	470.7	454.0	452.5	457.6
58.5°	524.0	485.5	455.6	439.3	436.5	441.7
59°	506.5	469.2	441.3	425.4	421.8	425.8
59.5°	489.4	454.0	426.6	411.1	406.7	409.9
60°	472.7	438.1	412.3	397.6	392.4	394.8
60.5°	456.0	423.4	398.4	383.3	377.7	379.3
61°	440.5	408.7	384.5	370.2	363.8	364.2
61.5°	424.6	394.4	371.3	357.0	349.9	349.5
62°	409.5	380.5	357.8	344.3	336.8	335.2
62.5°	394.4	366.6	344.3	331.2	323.2	320.5
63°	379.7	353.1	331.6	318.5	310.5	306.9
63.5°	365.8	340.3	318.9	306.1	297.8	293.4
64°	351.9	326.8	306.5	293.8	285.5	280.3
64.5°	338.7	314.9	294.2	281.9	273.5	266.8
65°	326.0	302.6	282.7	270.0	262.0	254.5
65.5°	312.9	290.6	270.8	258.4	250.5	241.7
66°	299.8	278.7	259.2	246.9	239.3	229.4



TEST NUMBER: P776247

CATALOG NUMBER: HCDJBL3040CSD-HCD41TRH-HCD41TRLWW-4000lm-3500K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
67.5°	264.4	245.7	227.0	214.7	206.3	196.0
68°	252.9	235.0	217.1	204.8	195.6	186.1
68.5°	242.1	224.6	207.1	195.2	185.3	176.9
69°	231.4	214.7	197.6	186.1	175.3	168.2
69.5°	221.1	204.8	188.5	176.9	165.8	160.6
70°	211.1	195.6	179.7	168.6	157.0	155.9
70.5°	201.6	186.5	171.0	161.0	149.5	153.1
71°	191.6	177.7	162.6	153.5	143.5	150.3
71.5°	182.5	169.0	155.1	146.3	140.7	147.5
72°	173.7	160.6	147.5	140.7	137.6	144.7
72.5°	165.4	152.7	142.7	135.2	134.8	141.1
73°	156.6	145.1	136.0	129.6	131.6	137.6
73.5°	148.7	138.4	129.2	124.4	128.4	134.4
74°	141.1	131.6	122.5	118.9	124.4	130.8
74.5°	133.6	124.8	115.7	114.9	120.9	127.6
75°	126.0	118.1	110.1	110.9	116.9	123.6
75.5°	119.3	110.9	105.0	107.3	112.5	119.7
76°	112.1	105.0	99.8	103.8	108.1	115.3
76.5°	105.4	99.0	94.6	100.2	103.8	110.5
77°	99.0	93.0	90.3	96.2	99.0	106.2
77.5°	92.6	87.5	85.5	91.8	94.6	101.4
78°	86.3	81.9	81.1	87.9	89.9	96.6
78.5°	79.9	76.3	76.3	83.5	84.7	91.4
79°	74.0	71.2	72.0	79.1	79.5	86.3
79.5°	68.0	65.6	68.0	74.7	74.3	81.1
80°	62.4	60.8	64.0	70.0	68.8	75.9
80.5°	56.9	56.1	60.0	65.6	63.6	70.4
81°	51.3	51.3	56.1	60.8	58.4	64.8
81.5°	46.1	46.9	52.1	56.1	52.9	59.2
82°	41.3	42.1	47.7	51.7	47.7	53.7
82.5°	36.6	37.8	43.3	46.9	42.5	48.1
83°	31.4	33.8	38.6	42.5	37.4	41.7
83.5°	26.6	29.4	34.2	38.2	32.6	35.8
84°	21.9	25.0	29.4	33.8	28.2	29.8
84.5°	17.1	20.7	24.7	29.4	24.3	24.3
85°	12.7	16.3	19.9	24.7	21.1	19.1
85.5°	8.7	12.3	14.7	19.9	17.9	15.5
86°	5.2	8.3	11.1	15.1	14.7	13.5
86.5°	2.0	4.4	7.6	11.5	11.9	11.1
87°	0.0	0.8	4.0	8.0	9.1	9.1
87.5°	0.0	0.0	0.4	4.0	6.0	7.2
88°	0.0	0.0	0.0	0.4	3.2	5.2
88.5°	0.0	0.0	0.0	0.4	0.8	3.2



TEST NUMBER: P776247

CATALOG NUMBER: HCDJBL3040CSD-HCD41TRH-HCD41TRLWW-4000lm-3500K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
90°	0.0	0.0	0.0	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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Peachtree City, GA 30269

Scaled Data Report



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Peachtree City, GA 30269

Scaled Data Report





21.5°	1782.4	1833.7	1893.3	1969.6	2053.1	2130.3	2183.5	2206.6	2199.4	2155.3	2092.1
22°	1766.1	1818.2	1879.0	1956.5	2041.2	2120.7	2175.2	2199.0	2191.5	2146.6	2081.8



44°	957.4	1018.6	1076.7	1157.8	1257.2	1376.4	1475.4	1525.1	1505.3	1398.3	1279.4
44.5°	939.1	999.5	1057.2	1137.5	1235.7	1353.0	1450.8	1499.7	1479.0	1372.1	1254.0



66.5°	217.9	267.6	311.7	352.3	383.3	413.5	433.8	436.5	413.5	369.0	327.6
67°	206.7	255.3	299.0	339.5	369.4	398.4	417.5	419.9	396.4	354.2	314.1



89°	1.2	10.3	21.1	25.0	21.1	16.7	9.5	2.4	0.4	0.0	0.0
89.5°	0.4	7.6	16.3	20.3	16.3	12.3	6.0	1.2	0.0	0.0	0.0

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21.5°	2005.8	1924.7	1846.4	1796.3	1775.2	1782.4
22°	1993.9	1910.0	1829.7	1779.6	1758.9	1766.1



44°	1149.8	1051.2	974.1	938.7	936.7	957.4
44.5°	1127.2	1029.7	953.8	919.2	918.0	939.1



66.5°	287.9	267.2	248.5	236.2	227.8	217.9
67°	275.9	256.0	237.4	225.4	217.1	206.7

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Scaled Data Report



89°	0.0	0.0	0.0	0.4	0.4	1.2
89.5°	0.0	0.0	0.0	0.4	0.4	0.4

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Scaled Data Report



(END OF REPORT)