

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: P776245

Luminaire Tested: HCDJBL3040CSD-HCD41TRH-HCD41TRLWW-4000lm-2700K

Issue Date: 2/13/2024

Test Information

Test Method: LM-79-2019
Report Number: P776245
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-2700K
Description: 4 INCH ROUND SHALLOW-WIDE LENSED WALLWASH KIT
Light Source: SELECTABLE LUMENS AND CCT ARRAY 90CRI / 2700K CCT
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 4595.9 lumens
Efficiency: N/A
Efficacy: 119.4 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

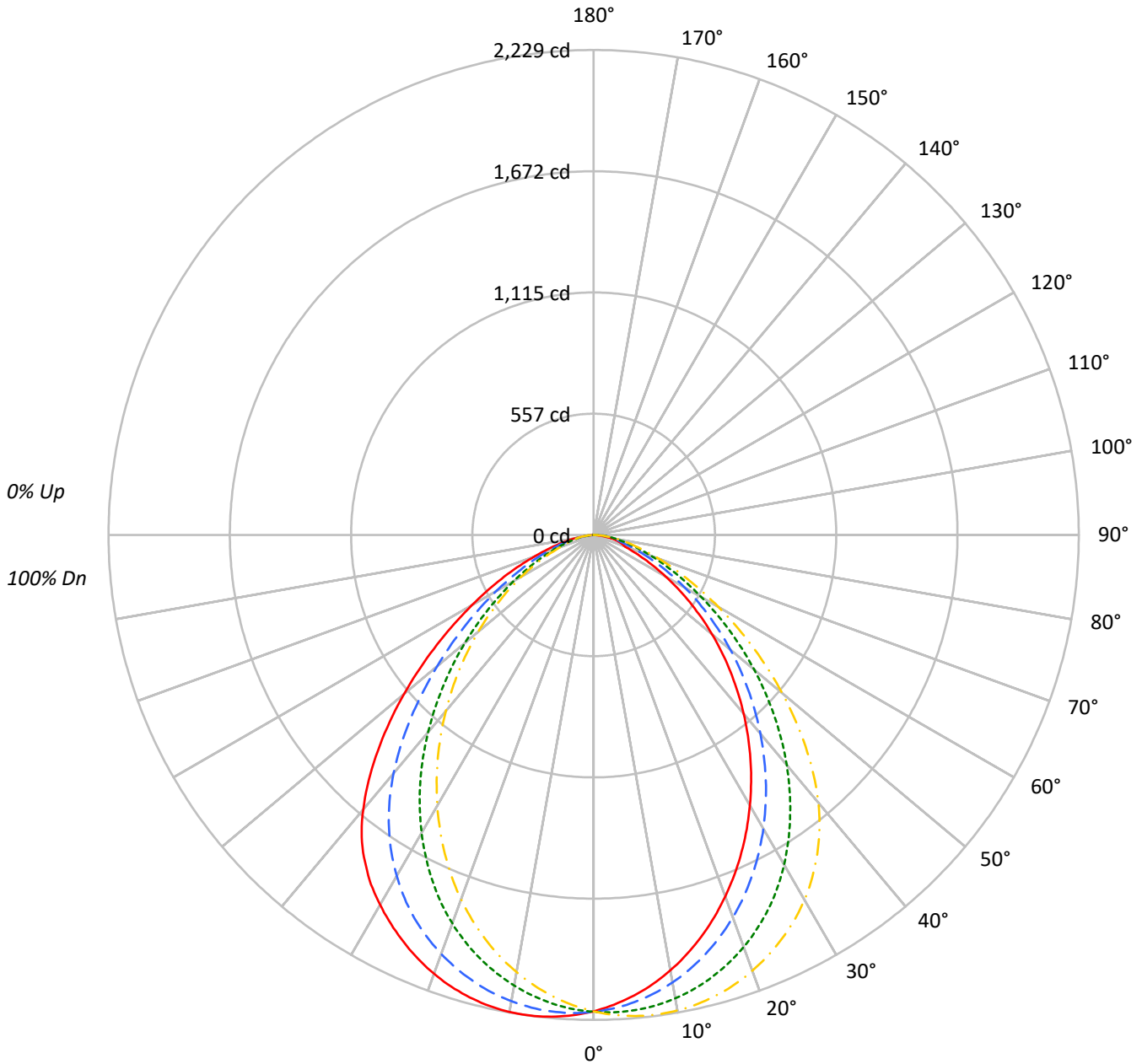
Input Watts (W): 38.5
Input Voltage (V): NR
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT



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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°	275687	275687	275687	275687
5°	268503	276992	280820	273152
10°	259672	276412	284514	268758
15°	249035	274064	286715	262598
20°	236862	269875	287420	254393
25°	223287	263612	286760	243394
30°	208678	254279	285188	229720
35°	192888	241851	281565	213352
40°	176032	226697	270611	194333
45°	158098	208751	249633	173280
50°	139029	188367	222571	151207
55°	118395	166337	192798	128247
60°	95998	143846	162699	106519
65°	73196	122718	134837	87043
70°	55378	103875	106120	69544
75°	58058	86844	83294	55481
80°	53196	75953	59284	42615
85°	26569	77108	16606	22670

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 67.5°
 Vertical Angle: 89.5°
 Luminance: 282662 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	206.3	4.5
10°-20°	579.4	12.6
20°-30°	842.5	18.3
30°-40°	943.7	20.5
40°-50°	853.7	18.6
50°-60°	620.0	13.5
60°-70°	354.7	7.7
70°-80°	157.4	3.4
80°-90°	38.1	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°	1628.1	35.4
0°-40°	2571.8	56.0
0°-60°	4045.6	88.0
0°-90°	4595.9	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4595.9	100.0

CANDELA DISTRIBUTION:

	0°	90°	180°	270°	360°	Flux
0°	2191	2191	2191	2191	2191	
5°	2125	2193	2223	2162	2125	200
15°	1911	2104	2201	2016	1911	537
25°	1608	1898	2065	1753	1608	739
35°	1256	1574	1833	1389	1256	784
45°	888	1173	1403	974	888	685
55°	540	758	879	584	540	483
65°	246	412	453	292	246	248
75°	119	179	171	114	119	123
85°	18	53	12	16	18	29
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°	2190.6	2190.6	2190.6	2190.6	2190.6	2190.6	2190.6	2190.6	2190.6	2190.6	2190.6
0.5°	2184.5	2189.9	2189.9	2189.5	2193.7	2193.7	2194.1	2194.1	2194.1	2197.2	2194.1
1°	2178.7	2185.7	2187.2	2188.7	2194.9	2196.4	2197.9	2198.7	2198.3	2200.2	2196.0
1.5°	2173.4	2181.4	2184.1	2187.6	2195.3	2199.1	2201.8	2202.9	2202.6	2203.3	2197.6
2°	2167.2	2176.4	2181.0	2186.0	2196.0	2201.0	2205.2	2207.2	2206.4	2206.0	2198.7
2.5°	2161.1	2171.4	2177.6	2184.5	2196.0	2202.9	2208.3	2210.6	2209.9	2208.3	2199.5
3°	2154.2	2166.1	2173.7	2182.6	2196.0	2204.5	2211.0	2214.1	2213.3	2210.2	2199.9
3.5°	2147.6	2160.3	2169.5	2180.3	2195.6	2206.0	2213.7	2217.1	2216.0	2212.2	2200.2
4°	2140.3	2154.5	2165.3	2177.6	2194.9	2207.2	2216.0	2219.8	2218.7	2213.3	2199.9
4.5°	2133.0	2148.4	2160.3	2174.9	2193.7	2207.9	2217.9	2222.5	2221.0	2214.5	2199.5
5°	2125.4	2141.5	2155.3	2171.8	2192.6	2208.3	2219.5	2224.8	2222.9	2215.2	2199.1
5.5°	2117.3	2135.0	2149.9	2168.4	2191.0	2208.3	2220.6	2226.4	2224.4	2216.0	2197.9
6°	2108.8	2127.7	2144.2	2164.5	2189.1	2207.9	2221.8	2228.3	2226.0	2216.0	2196.8
6.5°	2100.4	2120.4	2138.4	2160.3	2186.8	2207.5	2222.5	2229.4	2227.1	2216.0	2195.3
7°	2091.6	2112.7	2132.3	2156.1	2184.1	2206.8	2222.9	2230.2	2227.9	2215.6	2193.3
7.5°	2082.3	2104.6	2125.7	2151.5	2181.4	2206.0	2222.9	2231.0	2228.3	2214.8	2191.4
8°	2072.7	2096.2	2118.8	2146.5	2178.4	2204.5	2222.9	2231.4	2228.7	2214.1	2188.7
8.5°	2063.1	2087.3	2111.5	2141.1	2174.9	2202.6	2222.5	2231.4	2228.3	2212.9	2186.0
9°	2053.2	2078.5	2104.2	2135.7	2171.4	2200.6	2221.4	2231.4	2227.9	2211.0	2183.4
9.5°	2042.4	2069.3	2096.6	2129.6	2167.2	2198.3	2220.6	2230.6	2227.5	2209.5	2179.9
10°	2032.0	2059.7	2088.5	2123.4	2163.0	2196.0	2219.1	2229.8	2226.4	2207.2	2176.4
10.5°	2020.9	2049.7	2080.0	2116.9	2158.0	2193.0	2217.5	2228.7	2225.2	2204.9	2172.6
11°	2010.1	2040.1	2071.6	2110.4	2153.0	2189.9	2215.6	2227.1	2223.3	2202.2	2168.4
11.5°	1998.2	2029.3	2062.8	2103.5	2148.0	2186.4	2213.3	2225.6	2221.8	2199.1	2164.1
12°	1986.7	2019.4	2053.5	2095.8	2142.6	2182.6	2211.0	2223.7	2219.5	2196.0	2159.5
12.5°	1974.8	2008.2	2043.9	2088.5	2136.9	2178.7	2207.9	2221.4	2217.1	2192.6	2154.5
13°	1962.5	1997.1	2034.3	2080.4	2130.7	2174.5	2204.9	2218.7	2214.5	2188.7	2149.6
13.5°	1950.2	1985.6	2024.4	2072.0	2124.6	2169.9	2201.8	2215.6	2211.4	2184.5	2143.8
14°	1937.6	1974.0	2014.0	2063.5	2117.7	2164.9	2197.9	2212.5	2207.9	2180.3	2138.0
14.5°	1924.5	1962.1	2003.2	2054.7	2110.8	2159.5	2194.1	2209.1	2204.1	2175.7	2131.9
15°	1911.4	1950.2	1992.9	2045.9	2103.5	2154.2	2189.9	2205.6	2200.6	2170.7	2126.1
15.5°	1898.0	1937.2	1981.3	2036.3	2095.8	2148.4	2185.3	2201.4	2196.4	2165.3	2119.2
16°	1884.6	1924.9	1970.2	2026.7	2087.7	2142.3	2180.3	2197.2	2191.8	2159.9	2112.3
16.5°	1870.3	1912.2	1958.3	2017.1	2080.0	2136.1	2175.3	2192.6	2186.8	2154.2	2105.4
17°	1856.5	1899.2	1946.8	2007.1	2071.6	2129.6	2169.9	2188.0	2182.2	2148.0	2098.1
17.5°	1842.3	1885.7	1934.5	1996.3	2062.8	2122.7	2164.1	2182.6	2176.8	2141.5	2090.4
18°	1828.1	1872.3	1922.2	1985.6	2053.9	2115.4	2158.4	2177.2	2171.1	2135.3	2082.7
18.5°	1813.1	1858.4	1909.5	1974.4	2044.7	2108.1	2152.2	2171.4	2165.3	2128.4	2074.3
19°	1798.1	1844.2	1896.8	1962.9	2035.1	2100.4	2145.7	2165.7	2159.2	2121.1	2066.2
19.5°	1783.5	1830.0	1883.4	1951.4	2025.5	2092.3	2138.8	2159.2	2152.6	2113.8	2057.8
20°	1768.6	1815.8	1870.3	1939.9	2015.1	2084.3	2131.9	2152.6	2146.1	2106.5	2048.9
20.5°	1752.8	1801.2	1856.9	1927.6	2004.8	2075.8	2124.6	2146.1	2139.2	2098.5	2039.7
21°	1737.5	1786.2	1843.1	1915.3	1994.0	2067.0	2116.9	2138.8	2131.9	2090.4	2030.5



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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°	1689.8	1740.9	1800.4	1876.5	1960.2	2038.9	2092.7	2116.1	2108.8	2064.7	2000.9
23°	1674.1	1725.6	1785.9	1863.4	1948.7	2029.0	2084.3	2108.1	2100.4	2055.8	1990.6
23.5°	1657.6	1709.4	1770.9	1849.6	1936.4	2018.6	2075.4	2100.0	2092.3	2046.6	1980.2
24°	1641.1	1694.4	1755.9	1835.4	1924.1	2008.6	2066.2	2091.2	2083.5	2037.0	1969.0
24.5°	1624.6	1678.3	1740.5	1821.2	1911.4	1997.5	2057.0	2082.3	2074.7	2027.4	1957.5
25°	1608.0	1661.8	1724.8	1807.0	1898.4	1986.7	2047.4	2073.5	2065.1	2017.8	1946.0
25.5°	1591.1	1645.7	1709.0	1792.0	1884.9	1975.2	2037.8	2063.9	2055.8	2007.8	1934.1
26°	1574.6	1629.5	1692.5	1777.0	1871.5	1963.3	2027.8	2054.7	2046.6	1997.5	1921.8
26.5°	1557.3	1613.0	1676.8	1761.3	1857.3	1951.4	2017.4	2045.1	2036.6	1986.7	1909.1
27°	1540.4	1596.1	1660.7	1746.3	1842.7	1939.5	2007.1	2035.5	2026.7	1976.0	1895.7
27.5°	1523.2	1579.2	1644.1	1730.6	1828.1	1926.4	1996.3	2025.5	2016.7	1965.2	1882.3
28°	1505.9	1562.3	1626.9	1714.0	1813.1	1913.4	1985.2	2014.8	2005.9	1954.1	1868.4
28.5°	1488.6	1545.4	1610.7	1697.5	1797.8	1899.9	1973.3	2004.8	1995.5	1941.8	1853.8
29°	1470.9	1528.2	1593.8	1680.6	1782.0	1886.5	1961.8	1994.0	1984.8	1929.9	1839.2
29.5°	1453.3	1510.9	1576.9	1664.1	1765.9	1871.9	1949.5	1983.3	1974.0	1917.2	1824.6
30°	1436.0	1493.6	1558.5	1647.2	1749.8	1857.3	1937.2	1972.1	1962.5	1904.5	1809.7
30.5°	1417.9	1476.3	1541.6	1629.5	1733.6	1841.9	1924.1	1960.6	1951.4	1891.1	1793.9
31°	1399.9	1458.3	1523.9	1612.3	1716.7	1826.6	1910.7	1948.7	1939.9	1877.3	1778.2
31.5°	1382.2	1441.0	1506.3	1594.6	1699.4	1810.8	1897.2	1936.8	1928.3	1863.4	1762.4
32°	1364.5	1422.9	1487.8	1576.5	1682.2	1795.5	1883.0	1924.5	1916.0	1849.2	1745.9
32.5°	1346.5	1404.9	1470.2	1559.3	1664.9	1778.9	1868.0	1911.4	1904.1	1834.2	1729.4
33°	1328.4	1387.2	1451.7	1540.4	1647.2	1762.8	1853.1	1898.0	1891.1	1818.9	1712.1
33.5°	1310.4	1369.2	1434.1	1522.4	1629.2	1745.9	1837.7	1884.6	1876.9	1803.1	1694.8
34°	1292.3	1351.1	1415.2	1504.3	1611.1	1729.0	1822.3	1870.3	1861.9	1788.2	1676.8
34.5°	1273.9	1333.1	1397.2	1485.9	1592.3	1711.7	1806.6	1855.8	1847.3	1771.3	1658.7
35°	1255.5	1314.6	1378.4	1467.1	1574.2	1694.1	1790.5	1840.4	1832.7	1754.7	1640.3
35.5°	1237.4	1296.6	1359.9	1447.9	1555.4	1676.4	1773.9	1825.4	1818.1	1737.5	1620.7
36°	1219.0	1278.1	1341.1	1429.1	1536.6	1658.3	1757.1	1809.3	1802.4	1719.8	1601.5
36.5°	1200.9	1260.1	1323.1	1410.2	1517.8	1639.5	1739.8	1793.5	1785.9	1700.2	1581.2
37°	1182.1	1241.6	1304.6	1391.4	1498.6	1620.7	1722.1	1776.6	1768.6	1681.0	1560.8
37.5°	1164.1	1222.8	1285.0	1372.2	1478.6	1601.9	1703.7	1759.7	1750.9	1661.0	1540.1
38°	1145.3	1204.4	1266.6	1352.6	1459.0	1582.3	1684.8	1741.7	1731.3	1640.3	1518.9
38.5°	1127.6	1186.3	1247.4	1333.4	1439.4	1562.3	1666.0	1722.9	1711.7	1618.8	1497.4
39°	1109.1	1167.5	1228.6	1313.5	1419.5	1543.1	1646.4	1702.5	1691.4	1596.9	1474.8
39.5°	1090.3	1149.5	1209.8	1295.0	1399.5	1522.8	1626.9	1681.8	1669.1	1574.2	1452.5
40°	1071.5	1131.0	1191.0	1275.4	1379.9	1502.4	1605.7	1659.9	1647.2	1551.2	1429.5
40.5°	1053.8	1112.6	1172.1	1255.5	1359.2	1481.3	1584.6	1638.4	1624.6	1527.4	1406.0
41°	1034.6	1094.2	1152.9	1235.9	1338.8	1460.6	1562.3	1615.3	1601.5	1503.2	1382.6
41.5°	1016.6	1075.7	1134.5	1216.7	1318.5	1439.4	1541.2	1593.1	1577.7	1478.6	1359.2
42°	998.2	1056.9	1115.7	1196.7	1297.7	1417.5	1518.2	1569.2	1553.5	1453.6	1335.0
42.5°	980.1	1038.9	1096.5	1177.1	1277.0	1396.0	1495.5	1546.6	1529.3	1429.1	1310.8
43°	961.7	1020.4	1077.7	1157.9	1256.6	1374.5	1472.1	1522.4	1504.7	1402.6	1286.2
43.5°	943.6	1002.4	1058.8	1138.3	1235.9	1352.3	1449.0	1498.2	1479.4	1376.8	1261.6



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
45°	888.3	947.5	1002.8	1079.6	1172.9	1284.3	1377.2	1423.7	1402.6	1298.5	1186.3
45.5°	871.0	929.0	983.9	1059.6	1152.2	1261.6	1353.4	1398.7	1376.5	1272.4	1161.4
46°	852.6	911.0	965.5	1040.0	1131.0	1238.2	1328.4	1373.4	1350.3	1246.3	1135.6
46.5°	834.6	893.3	947.1	1020.8	1109.5	1215.5	1304.2	1347.6	1323.5	1219.8	1110.7
47°	816.5	874.9	928.6	1001.2	1088.4	1192.1	1279.7	1321.5	1297.0	1193.3	1085.3
47.5°	798.8	856.8	910.2	982.0	1067.3	1169.1	1254.7	1295.4	1270.1	1167.1	1060.8
48°	780.8	838.8	891.8	962.4	1046.5	1146.0	1229.7	1269.7	1243.6	1141.0	1035.8
48.5°	763.1	821.1	873.3	943.2	1025.4	1122.6	1205.2	1244.0	1217.1	1115.3	1011.2
49°	745.5	803.4	855.3	924.0	1004.3	1099.5	1180.2	1217.5	1189.8	1088.8	987.0
49.5°	728.2	785.4	837.6	905.2	983.2	1076.5	1155.2	1191.3	1163.3	1063.4	962.8
50°	710.1	768.1	819.2	886.4	962.1	1053.5	1130.3	1164.8	1136.8	1037.3	938.6
50.5°	692.8	750.4	801.1	866.8	941.3	1030.4	1105.7	1138.3	1109.9	1012.4	914.4
51°	675.6	732.8	783.5	847.6	920.2	1007.0	1080.7	1112.6	1083.8	987.0	891.4
51.5°	658.3	715.1	765.8	829.2	899.5	984.7	1056.2	1086.5	1056.9	961.7	868.0
52°	641.4	697.8	748.5	810.7	879.1	961.7	1032.0	1060.4	1030.8	937.1	844.9
52.5°	624.5	680.5	730.9	792.3	858.7	939.0	1007.0	1033.9	1004.7	912.5	822.3
53°	607.2	663.6	713.2	773.1	838.4	916.4	982.4	1008.1	979.3	888.3	799.6
53.5°	589.5	646.0	695.9	755.1	817.7	894.5	958.2	982.4	953.6	863.7	777.3
54°	573.0	629.5	679.0	736.6	797.7	871.8	934.0	957.1	927.5	840.3	755.4
54.5°	556.1	612.2	661.7	718.2	778.1	850.3	910.6	930.9	902.9	816.9	733.9
55°	539.6	596.1	644.8	700.5	758.1	828.8	887.2	907.1	878.7	793.8	712.8
55.5°	523.1	579.2	627.9	682.5	738.5	807.3	863.4	881.4	853.4	770.8	690.9
56°	506.6	563.0	611.4	664.4	718.6	785.4	839.5	856.8	829.2	747.8	670.6
56.5°	490.1	546.5	594.9	646.7	699.7	764.3	816.5	832.2	805.0	725.5	650.6
57°	473.9	530.4	578.4	629.5	680.9	743.5	793.8	808.1	781.2	703.6	630.2
57.5°	458.2	514.2	561.9	611.8	662.1	723.2	771.6	784.2	757.7	682.1	610.6
58°	442.0	498.5	545.7	594.5	643.3	702.4	748.9	760.8	735.1	661.0	591.4
58.5°	426.7	482.8	530.0	577.6	625.2	682.5	727.0	737.8	712.0	639.5	572.2
59°	411.3	467.8	514.2	561.1	606.8	662.5	705.1	715.1	689.4	619.1	553.8
59.5°	396.0	452.0	497.7	544.6	589.1	642.9	683.6	692.8	667.5	598.7	535.4
60°	381.4	437.1	482.4	528.5	571.5	623.3	662.5	670.9	646.4	579.2	517.3
60.5°	366.4	421.7	466.6	511.9	554.2	604.5	641.4	649.1	624.5	559.6	499.3
61°	351.8	407.1	451.6	496.2	537.3	585.7	621.0	627.9	604.1	540.4	482.4
61.5°	337.6	392.5	436.3	480.5	521.2	567.2	601.0	607.2	583.4	521.5	465.5
62°	323.8	378.3	422.1	465.5	504.3	549.2	581.1	586.8	564.2	503.9	449.0
62.5°	309.5	364.1	407.5	450.1	488.5	531.1	561.5	566.5	544.2	485.4	432.4
63°	296.5	350.3	393.3	435.5	472.4	513.5	542.3	546.9	524.6	467.8	416.7
63.5°	283.4	336.4	379.1	421.3	457.0	496.2	523.5	527.7	506.2	450.5	401.0
64°	270.8	322.6	366.0	407.1	441.7	479.3	505.0	509.3	487.7	434.7	386.0
64.5°	257.7	309.2	352.2	392.9	427.1	462.8	487.0	490.8	469.7	417.9	371.4
65°	245.8	296.5	339.1	379.4	412.1	446.7	469.7	472.8	452.8	402.1	357.2
65.5°	233.5	283.8	326.1	366.4	397.9	430.5	452.4	455.5	435.1	386.0	343.0
66°	221.6	271.1	313.8	353.3	384.1	414.8	435.5	438.2	417.1	371.0	329.5



TEST NUMBER: P776245

CATALOG NUMBER: HCDJBL3040CSD-HCD41TRH-HCD41TRLWW-4000lm-2700K

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
67.5°	189.3	235.0	276.9	314.9	344.1	370.2	387.9	389.4	366.0	328.0	290.0
68°	179.7	223.9	265.8	303.0	331.8	355.6	372.1	373.3	349.9	313.8	278.1
68.5°	170.9	212.8	254.2	291.1	319.5	341.8	357.6	357.9	334.5	299.6	266.1
69°	162.5	202.0	243.1	279.6	306.9	328.8	343.3	343.3	319.1	285.4	254.6
69.5°	155.2	191.6	232.4	268.1	294.6	315.7	329.9	329.1	303.8	271.9	243.5
70°	150.5	181.7	221.6	256.9	282.3	303.0	316.5	314.9	288.4	259.2	232.4
70.5°	147.9	172.1	211.6	245.8	270.4	290.0	303.0	301.1	275.4	246.6	222.0
71°	145.2	163.6	201.6	235.4	259.2	277.7	289.6	286.9	262.3	234.7	211.6
71.5°	142.5	155.5	192.4	224.7	248.1	265.8	277.3	273.4	248.9	223.1	201.6
72°	139.8	149.0	183.2	214.7	237.3	254.6	265.0	260.8	236.6	212.0	192.0
72.5°	136.3	144.4	174.4	205.1	227.0	243.1	253.1	248.5	224.7	201.2	182.4
73°	132.9	140.9	166.3	195.5	216.6	232.4	242.3	236.6	213.2	190.5	173.2
73.5°	129.8	137.9	158.2	186.3	206.6	221.6	230.8	225.1	202.0	180.1	164.4
74°	126.4	134.8	150.9	177.4	197.0	212.0	220.1	213.9	191.6	170.1	155.5
74.5°	123.3	132.1	143.6	169.0	187.8	202.0	209.7	203.2	181.3	160.5	147.1
75°	119.4	129.0	137.1	160.9	178.6	192.4	200.1	192.8	171.3	151.3	139.0
75.5°	115.6	126.0	132.5	152.9	169.8	182.8	189.7	182.8	161.7	142.1	131.0
76°	111.4	122.5	127.9	145.6	161.7	174.0	180.5	172.8	152.1	133.3	122.9
76.5°	106.8	118.7	123.3	138.3	153.2	165.5	171.3	163.2	143.3	124.4	115.2
77°	102.5	114.8	118.3	132.1	145.6	157.1	162.5	153.6	134.0	116.0	107.9
77.5°	97.9	111.0	114.8	126.4	138.3	149.0	153.6	144.8	125.2	107.5	100.6
78°	93.3	106.8	111.8	120.6	131.0	140.9	145.2	136.0	116.4	99.5	92.9
78.5°	88.3	102.9	108.7	114.8	124.0	133.7	137.1	127.5	107.5	91.4	86.0
79°	83.3	98.3	105.2	109.1	117.5	126.4	129.0	119.1	98.7	83.3	79.1
79.5°	78.3	94.1	101.8	104.1	111.0	119.4	121.4	110.6	90.3	75.7	72.2
80°	73.4	89.5	97.9	99.1	104.8	112.5	114.1	102.5	81.8	68.4	65.7
80.5°	68.0	84.9	94.1	94.9	99.1	106.0	106.8	95.2	73.4	60.7	59.5
81°	62.6	79.9	90.3	90.6	93.3	99.5	99.5	87.2	64.9	53.8	53.4
81.5°	57.2	75.3	86.0	86.4	87.9	93.3	92.6	79.9	56.5	46.9	47.2
82°	51.8	69.9	81.8	82.2	82.6	87.2	85.3	72.6	48.0	41.1	41.5
82.5°	46.5	64.9	77.6	78.3	77.6	81.4	78.3	65.7	41.5	35.7	36.5
83°	40.3	59.5	73.4	74.1	72.6	75.3	71.8	58.8	34.6	30.3	31.5
83.5°	34.6	54.2	68.7	70.7	67.6	69.5	65.3	52.6	27.7	25.0	26.5
84°	28.8	48.8	64.5	66.8	62.6	63.8	59.1	46.1	21.1	19.6	21.5
84.5°	23.4	43.4	59.9	63.0	58.0	58.4	53.4	40.7	14.2	15.7	16.9
85°	18.4	38.0	55.7	59.1	53.4	53.0	47.6	35.3	11.5	12.3	12.3
85.5°	15.0	33.0	51.5	55.3	49.2	48.0	42.2	30.3	9.2	8.8	8.8
86°	13.1	28.8	47.2	51.1	44.9	43.0	37.6	25.0	7.7	5.8	5.4
86.5°	10.8	25.3	43.0	46.9	40.7	38.4	32.6	19.6	6.1	3.1	3.1
87°	8.8	22.3	38.8	42.2	36.9	33.8	27.7	15.4	4.6	1.5	1.2
87.5°	6.9	19.2	34.2	38.0	32.6	29.2	22.7	11.1	3.8	0.8	0.0
88°	5.0	16.1	30.0	33.4	28.4	24.6	17.7	7.7	2.3	0.4	0.0
88.5°	3.1	13.1	25.3	29.2	24.6	20.0	13.4	4.6	1.2	0.0	0.0



TEST NUMBER: P776245

CATALOG NUMBER: HCDJBL3040CSD-HCD41TRH-HCD41TRLWW-4000lm-2700K

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
90°	0.0	4.2	12.7	14.6	11.5	8.4	3.1	0.4	0.0	0.0	0.0



TEST NUMBER: P776245

CATALOG NUMBER: HCDJBL3040CSD-HCD41TRH-HCD41TRLWW-4000lm-2700K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
0°	2190.6	2190.6	2190.6	2190.6	2190.6	2190.6
0.5°	2189.9	2190.6	2187.2	2184.9	2184.1	2184.5
1°	2189.9	2188.7	2183.7	2179.9	2178.4	2178.7
1.5°	2189.5	2186.4	2179.5	2174.5	2172.6	2173.4
2°	2188.7	2183.7	2175.3	2169.1	2166.5	2167.2
2.5°	2187.6	2181.0	2170.7	2163.8	2160.3	2161.1
3°	2186.4	2178.0	2165.7	2157.2	2153.8	2154.2
3.5°	2184.5	2174.5	2160.7	2151.1	2146.9	2147.6
4°	2183.0	2170.7	2155.3	2144.2	2139.2	2140.3
4.5°	2180.7	2166.8	2149.2	2137.3	2131.5	2133.0
5°	2178.0	2162.2	2143.4	2130.0	2123.8	2125.4
5.5°	2175.3	2157.6	2136.9	2122.3	2115.8	2117.3
6°	2172.2	2153.0	2130.0	2114.2	2107.3	2108.8
6.5°	2168.8	2147.6	2123.4	2106.2	2098.5	2100.4
7°	2164.9	2142.3	2116.1	2097.7	2089.3	2091.6
7.5°	2161.1	2136.5	2108.5	2088.9	2080.0	2082.3
8°	2156.9	2130.4	2100.8	2079.7	2070.1	2072.7
8.5°	2152.2	2124.2	2092.3	2070.4	2060.1	2063.1
9°	2147.6	2117.3	2084.3	2060.8	2050.1	2053.2
9.5°	2142.3	2110.4	2075.0	2050.9	2039.3	2042.4
10°	2136.9	2103.1	2066.2	2040.5	2028.6	2032.0
10.5°	2131.5	2095.8	2057.0	2030.1	2017.8	2020.9
11°	2125.4	2087.7	2047.4	2019.4	2006.3	2010.1
11.5°	2119.2	2080.0	2037.8	2008.6	1994.8	1998.2
12°	2112.7	2071.2	2027.4	1997.1	1982.9	1986.7
12.5°	2106.2	2062.8	2017.1	1985.2	1971.0	1974.8
13°	2098.9	2053.9	2006.3	1973.7	1958.7	1962.5
13.5°	2091.6	2044.7	1995.5	1961.4	1945.6	1950.2
14°	2083.9	2035.1	1984.0	1949.1	1933.3	1937.6
14.5°	2076.2	2025.5	1972.9	1936.4	1920.3	1924.5
15°	2068.1	2015.5	1961.0	1923.7	1906.8	1911.4
15.5°	2059.7	2004.8	1948.7	1910.3	1893.4	1898.0
16°	2050.9	1994.4	1936.4	1897.2	1879.6	1884.6
16.5°	2042.0	1984.0	1924.1	1883.8	1865.7	1870.3
17°	2032.8	1972.5	1911.4	1870.0	1851.1	1856.5
17.5°	2023.6	1961.0	1898.0	1855.8	1836.5	1842.3
18°	2013.6	1949.5	1884.9	1841.5	1822.3	1828.1
18.5°	2004.0	1937.6	1871.1	1826.9	1807.4	1813.1
19°	1993.6	1925.3	1857.3	1812.4	1792.4	1798.1
19.5°	1983.3	1913.0	1843.1	1797.0	1777.0	1783.5
20°	1972.5	1899.5	1828.5	1782.0	1762.0	1768.6
20.5°	1961.4	1886.5	1813.9	1766.7	1746.7	1752.8
21°	1949.5	1872.7	1798.9	1750.9	1730.9	1737.5

TEST NUMBER: P776245

CATALOG NUMBER: HCDJBL3040CSD-HCD41TRH-HCD41TRLWW-4000lm-2700K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
22.5°	1913.7	1830.8	1752.1	1702.5	1682.5	1689.8
23°	1900.7	1815.4	1735.9	1686.0	1666.4	1674.1
23.5°	1887.6	1800.8	1719.4	1669.1	1649.9	1657.6
24°	1873.8	1785.1	1702.9	1652.2	1633.0	1641.1
24.5°	1860.4	1769.3	1686.0	1634.9	1616.1	1624.6
25°	1845.8	1752.8	1668.7	1617.6	1598.8	1608.0
25.5°	1831.6	1737.1	1651.8	1600.4	1581.9	1591.1
26°	1816.2	1720.9	1633.8	1582.7	1564.6	1574.6
26.5°	1801.2	1704.4	1616.9	1564.6	1547.0	1557.3
27°	1785.9	1686.8	1598.4	1547.0	1529.7	1540.4
27.5°	1770.1	1669.9	1580.8	1528.9	1512.0	1523.2
28°	1754.0	1652.2	1562.0	1510.5	1494.0	1505.9
28.5°	1738.2	1634.9	1544.3	1492.4	1475.9	1488.6
29°	1721.3	1617.3	1525.5	1474.0	1458.3	1470.9
29.5°	1704.4	1599.2	1507.4	1455.6	1440.2	1453.3
30°	1687.9	1580.8	1488.2	1437.1	1422.2	1436.0
30.5°	1671.0	1562.3	1469.4	1418.3	1403.7	1417.9
31°	1653.4	1543.9	1450.2	1399.5	1385.7	1399.9
31.5°	1635.3	1525.1	1431.4	1380.7	1367.2	1382.2
32°	1617.3	1505.9	1412.2	1361.5	1348.8	1364.5
32.5°	1598.8	1487.1	1392.6	1343.4	1330.0	1346.5
33°	1580.4	1467.9	1373.4	1323.8	1311.9	1328.4
33.5°	1561.2	1448.7	1354.2	1305.0	1293.1	1310.4
34°	1542.0	1428.7	1335.0	1285.4	1274.7	1292.3
34.5°	1522.8	1408.7	1315.4	1266.2	1256.2	1273.9
35°	1503.2	1388.7	1295.0	1247.4	1237.4	1255.5
35.5°	1482.8	1369.2	1275.4	1228.2	1219.0	1237.4
36°	1462.5	1349.2	1256.2	1209.0	1200.2	1219.0
36.5°	1442.1	1328.4	1236.7	1190.2	1181.7	1200.9
37°	1421.0	1307.7	1216.7	1170.6	1163.3	1182.1
37.5°	1399.9	1287.4	1196.7	1151.4	1144.5	1164.1
38°	1378.0	1266.6	1176.7	1132.2	1125.7	1145.3
38.5°	1357.6	1245.9	1157.2	1113.4	1107.2	1127.6
39°	1335.4	1225.1	1137.6	1094.2	1088.8	1109.1
39.5°	1313.1	1204.0	1117.6	1075.7	1070.4	1090.3
40°	1291.2	1182.9	1097.6	1056.2	1051.2	1071.5
40.5°	1268.9	1161.8	1077.7	1037.3	1033.1	1053.8
41°	1246.6	1141.0	1058.1	1018.1	1014.7	1034.6
41.5°	1224.4	1119.9	1038.1	999.7	996.2	1016.6
42°	1202.1	1099.2	1018.5	981.3	977.4	998.2
42.5°	1179.8	1078.4	998.9	962.1	959.8	980.1
43°	1156.4	1057.3	979.7	943.6	941.7	961.7
43.5°	1133.7	1036.2	959.8	924.8	922.9	943.6

TEST NUMBER: P776245

CATALOG NUMBER: HCDJBL3040CSD-HCD41TRH-HCD41TRLWW-4000lm-2700K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
45°	1065.4	973.6	902.1	869.9	868.7	888.3
45.5°	1043.1	953.6	883.3	851.4	850.7	871.0
46°	1019.7	933.3	864.5	833.8	833.0	852.6
46.5°	997.4	912.5	845.7	815.7	815.0	834.6
47°	974.3	892.2	826.5	798.1	797.7	816.5
47.5°	951.7	871.8	807.7	780.0	780.0	798.8
48°	929.0	851.8	789.2	762.0	762.3	780.8
48.5°	906.8	831.5	770.4	744.7	744.7	763.1
49°	884.9	811.9	752.7	727.4	727.4	745.5
49.5°	862.6	792.3	734.3	709.3	710.5	728.2
50°	839.9	772.3	715.9	692.1	693.6	710.1
50.5°	818.0	752.7	697.8	675.2	675.9	692.8
51°	797.3	733.2	680.5	658.3	659.0	675.6
51.5°	775.4	714.0	663.3	640.6	642.5	658.3
52°	754.3	695.1	645.6	624.9	626.0	641.4
52.5°	733.2	676.3	628.3	608.0	609.5	624.5
53°	712.8	657.1	611.8	591.4	593.0	607.2
53.5°	692.1	639.1	594.9	574.9	576.5	589.5
54°	672.9	620.2	578.4	559.2	560.3	573.0
54.5°	652.9	602.6	562.3	543.4	544.6	556.1
55°	633.3	584.5	546.1	527.7	528.8	539.6
55.5°	613.7	567.6	530.4	512.3	513.1	523.1
56°	595.3	550.0	514.6	497.4	497.4	506.6
56.5°	576.9	533.8	499.7	482.4	482.0	490.1
57°	558.8	516.6	484.3	467.4	466.6	473.9
57.5°	541.1	500.4	469.3	452.8	451.3	458.2
58°	523.5	484.3	454.7	438.6	437.1	442.0
58.5°	506.2	468.9	440.1	424.4	421.7	426.7
59°	489.3	453.2	426.3	410.9	407.5	411.3
59.5°	472.8	438.6	412.1	397.1	392.9	396.0
60°	456.6	423.2	398.3	384.1	379.1	381.4
60.5°	440.5	409.0	384.8	370.2	364.9	366.4
61°	425.5	394.8	371.4	357.6	351.4	351.8
61.5°	410.2	381.0	358.7	344.9	338.0	337.6
62°	395.6	367.5	345.6	332.6	325.3	323.8
62.5°	381.0	354.1	332.6	319.9	312.2	309.5
63°	366.8	341.0	320.3	307.6	299.9	296.5
63.5°	353.3	328.8	308.0	295.7	287.7	283.4
64°	339.9	315.7	296.1	283.8	275.8	270.8
64.5°	327.2	304.2	284.2	272.3	264.2	257.7
65°	314.9	292.3	273.1	260.8	253.1	245.8
65.5°	302.3	280.7	261.5	249.6	242.0	233.5
66°	289.6	269.2	250.4	238.5	231.2	221.6



TEST NUMBER: P776245

CATALOG NUMBER: HCDJBL3040CSD-HCD41TRH-HCD41TRLWW-4000lm-2700K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
67.5°	255.4	237.3	219.3	207.4	199.3	189.3
68°	244.3	227.0	209.7	197.8	189.0	179.7
68.5°	233.9	217.0	200.1	188.6	179.0	170.9
69°	223.5	207.4	190.9	179.7	169.4	162.5
69.5°	213.5	197.8	182.0	170.9	160.2	155.2
70°	203.9	189.0	173.6	162.8	151.7	150.5
70.5°	194.7	180.1	165.1	155.5	144.4	147.9
71°	185.1	171.7	157.1	148.2	138.6	145.2
71.5°	176.3	163.2	149.8	141.3	136.0	142.5
72°	167.8	155.2	142.5	136.0	132.9	139.8
72.5°	159.8	147.5	137.9	130.6	130.2	136.3
73°	151.3	140.2	131.3	125.2	127.1	132.9
73.5°	143.6	133.7	124.8	120.2	124.0	129.8
74°	136.3	127.1	118.3	114.8	120.2	126.4
74.5°	129.0	120.6	111.8	111.0	116.8	123.3
75°	121.7	114.1	106.4	107.2	112.9	119.4
75.5°	115.2	107.2	101.4	103.7	108.7	115.6
76°	108.3	101.4	96.4	100.2	104.5	111.4
76.5°	101.8	95.6	91.4	96.8	100.2	106.8
77°	95.6	89.9	87.2	92.9	95.6	102.5
77.5°	89.5	84.5	82.6	88.7	91.4	97.9
78°	83.3	79.1	78.3	84.9	86.8	93.3
78.5°	77.2	73.7	73.7	80.7	81.8	88.3
79°	71.4	68.7	69.5	76.4	76.8	83.3
79.5°	65.7	63.4	65.7	72.2	71.8	78.3
80°	60.3	58.8	61.8	67.6	66.4	73.4
80.5°	54.9	54.2	58.0	63.4	61.4	68.0
81°	49.5	49.5	54.2	58.8	56.5	62.6
81.5°	44.6	45.3	50.3	54.2	51.1	57.2
82°	39.9	40.7	46.1	49.9	46.1	51.8
82.5°	35.3	36.5	41.9	45.3	41.1	46.5
83°	30.3	32.6	37.3	41.1	36.1	40.3
83.5°	25.7	28.4	33.0	36.9	31.5	34.6
84°	21.1	24.2	28.4	32.6	27.3	28.8
84.5°	16.5	20.0	23.8	28.4	23.4	23.4
85°	12.3	15.7	19.2	23.8	20.4	18.4
85.5°	8.4	11.9	14.2	19.2	17.3	15.0
86°	5.0	8.1	10.8	14.6	14.2	13.1
86.5°	1.9	4.2	7.3	11.1	11.5	10.8
87°	0.0	0.8	3.8	7.7	8.8	8.8
87.5°	0.0	0.0	0.4	3.8	5.8	6.9
88°	0.0	0.0	0.0	0.4	3.1	5.0
88.5°	0.0	0.0	0.0	0.4	0.8	3.1



TEST NUMBER: P776245

CATALOG NUMBER: HCDJBL3040CSD-HCD41TRH-HCD41TRLWW-4000lm-2700K

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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Scaled Data Report





21.5°	1721.7	1771.3	1828.9	1902.6	1983.3	2057.8	2109.2	2131.5	2124.6	2082.0	2020.9
22°	1706.0	1756.3	1815.0	1889.9	1971.7	2048.5	2101.2	2124.2	2116.9	2073.5	2010.9



44°	924.8	983.9	1040.0	1118.4	1214.4	1329.6	1425.2	1473.2	1454.0	1350.7	1235.9
44.5°	907.1	965.5	1021.2	1098.8	1193.6	1306.9	1401.4	1448.7	1428.7	1325.4	1211.3



66.5°	210.5	258.5	301.1	340.3	370.2	399.4	419.0	421.7	399.4	356.4	316.5
67°	199.7	246.6	288.8	328.0	356.8	384.8	403.3	405.6	382.9	342.2	303.4



89°	1.2	10.0	20.4	24.2	20.4	16.1	9.2	2.3	0.4	0.0	0.0
89.5°	0.4	7.3	15.7	19.6	15.7	11.9	5.8	1.2	0.0	0.0	0.0

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21.5°	1937.6	1859.2	1783.5	1735.2	1714.8	1721.7
22°	1926.0	1845.0	1767.4	1719.0	1699.1	1706.0



44°	1110.7	1015.4	940.9	906.8	904.8	924.8
44.5°	1088.8	994.7	921.3	887.9	886.8	907.1

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66.5°	278.1	258.1	240.0	228.1	220.1	210.5
67°	266.5	247.3	229.3	217.8	209.7	199.7

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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)