

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: P776328

Luminaire Tested: HCDJBL3040CSD-HCD4TSQMB-4000lm-4000K

Issue Date: 2/7/2024

**Test Information**

Test Method: LM-79-2019  
Report Number: P776328  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA ( A2312156B006-HCD4TSQMB)  
Test Lab:  
Issue Date: 2/7/2024  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: HALO COMMERCIAL  
Catalog Number: HCDJBL3040CSD-HCD4TSQMB-4000lm-4000K  
Description: 4 INCH SQUARE MEDIUM MATTE BLACK TRIM  
Light Source: SELECTABLE LUMENS AND CCT ARRAY 90CRI / 4000K CCT  
Ballast/Driver: -

**Summary**

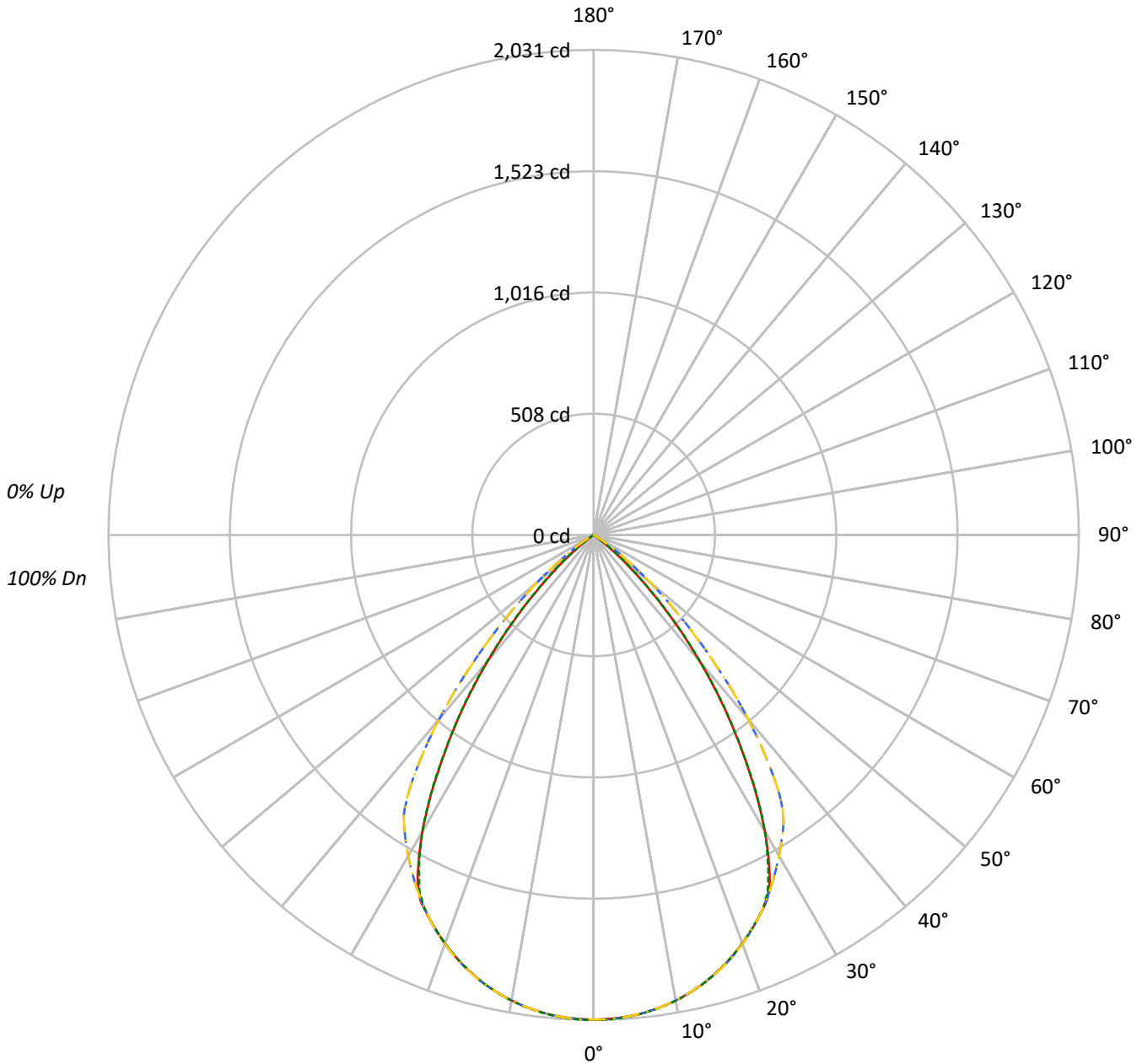
Lumens per Lamp: N/A  
Luminaire Lumens: 2686.0 lumens  
Efficiency: N/A  
Efficacy: 69.8 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1.1 / 1.14  
Luminous Opening: Rectangular (W 0.33' x L: 0.33' x H: 0')  
CIE Type: Direct

Input Watts (W): 38.5  
Input Voltage (V): NR  
Input Current (A<sub>in</sub>): 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



TEST NUMBER: P776328  
CATALOG NUMBER: HCDJBL3040CSD-HCD4TSQMB-4000lm-4000K

### Luminous Intensity Polar Plot





TEST NUMBER: P776328

CATALOG NUMBER: HCDJBL3040CSD-HCD4TSQMB-4000lm-4000K

**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	113	110	107	105	110	108	105	103	104	102	100	100	98	97	97	95	94	92	92	92	92
2	107	101	97	93	104	100	96	92	96	93	90	93	91	88	90	88	86	85	85	85	85
3	100	93	88	84	98	92	87	83	89	85	81	87	83	80	84	82	79	77	77	77	77
4	95	86	80	75	93	85	79	75	83	78	74	81	77	73	79	75	72	71	71	71	71
5	89	80	73	68	87	79	73	68	77	72	67	75	71	67	74	70	66	65	65	65	65
6	84	74	67	62	82	73	67	62	71	66	62	70	65	61	69	64	61	59	59	59	59
7	79	69	62	57	77	68	62	57	67	61	57	65	60	56	64	60	56	55	55	55	55
8	74	64	57	53	73	63	57	53	62	56	52	61	56	52	60	55	52	50	50	50	50
9	70	60	53	49	69	59	53	49	58	52	48	57	52	48	56	52	48	47	47	47	47
10	67	56	49	45	65	55	49	45	54	49	45	54	48	45	53	48	45	43	43	43	43

**AVERAGE LUMINANCE (cd/sqm):**

	0°	90°	180°	270°
0°	200660	200660	200660	200660
5°	200196	200315	200196	200315
10°	198707	198787	198707	198787
15°	195878	195919	195878	195919
20°	191469	191385	191469	191385
25°	185741	184999	185741	184999
30°	163587	163541	163587	163541
35°	127759	128193	127759	128193
40°	89172	90050	89172	90050
45°	50616	51958	50616	51958
50°	20129	21620	20129	21620
55°	2981	3826	2981	3826
60°	633	633	633	633
65°	468	468	468	468
70°	347	347	347	347
75°	306	306	306	306
80°	228	228	228	228
85°	0	0	0	0

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 45°

Vertical Angle: 45°

Luminance: 85562 cd/sqm



TEST NUMBER: P776328

CATALOG NUMBER: HCDJBL3040CSD-HCD4TSQMB-4000lm-4000K

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	191.4	7.1
10°-20°	538.9	20.1
20°-30°	776.3	28.9
30°-40°	732.7	27.3
40°-50°	377.7	14.1
50°-60°	65.9	2.5
60°-70°	2.4	0.1
70°-80°	0.7	0.0
80°-90°	0.1	0.0
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°	1506.7	56.1
0°-40°	2239.3	83.4
0°-60°	2682.9	99.9
0°-90°	2686.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2686.0	100.0

**CANDELA DISTRIBUTION:**

	0°	90°	180°	270°	360°	Flux
0°	2030	2030	2030	2030	2030	
5°	2018	2019	2018	2019	2018	191
15°	1914	1915	1914	1915	1914	539
25°	1703	1696	1703	1696	1703	770
35°	1059	1062	1059	1062	1059	657
45°	362	372	362	372	362	287
55°	17	22	17	22	17	31
65°	2	2	2	2	2	2
75°	1	1	1	1	1	1
85°	0	0	0	0	0	0
90°	0	0	0	0	0	0



TEST NUMBER: P776328

CATALOG NUMBER: HCDJBL3040CSD-HCD4TSQMB-4000lm-4000K

**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
0°	2030.1	2030.1	2030.1	2030.1	2030.1	2030.1	2030.1	2030.1	2030.1	2030.1	2030.1
0.5°	2029.7	2029.7	2029.7	2030.1	2031.4	2030.1	2029.7	2029.7	2029.7	2029.7	2029.7
1°	2029.3	2029.3	2029.3	2029.7	2031.0	2029.7	2029.3	2029.3	2029.3	2029.3	2029.3
1.5°	2028.5	2028.9	2028.9	2028.9	2030.1	2028.9	2028.9	2028.9	2028.5	2028.9	2028.9
2°	2027.7	2027.7	2028.1	2028.1	2029.3	2028.1	2028.1	2027.7	2027.7	2027.7	2028.1
2.5°	2026.5	2026.5	2026.9	2027.3	2028.1	2027.3	2026.9	2026.5	2026.5	2026.5	2026.9
3°	2025.3	2025.3	2025.7	2025.7	2026.9	2025.7	2025.7	2025.3	2025.3	2025.3	2025.7
3.5°	2023.7	2023.7	2024.1	2024.1	2025.3	2024.1	2024.1	2023.7	2023.7	2023.7	2024.1
4°	2022.1	2022.1	2022.1	2022.5	2023.3	2022.5	2022.1	2022.1	2022.1	2022.1	2022.1
4.5°	2020.1	2020.1	2020.1	2020.1	2021.3	2020.1	2020.1	2020.1	2020.1	2020.1	2020.1
5°	2017.7	2017.7	2017.7	2017.7	2018.9	2017.7	2017.7	2017.7	2017.7	2017.7	2017.7
5.5°	2014.8	2014.8	2015.2	2015.2	2016.1	2015.2	2015.2	2014.8	2014.8	2014.8	2015.2
6°	2012.0	2012.0	2012.0	2012.4	2013.2	2012.4	2012.0	2012.0	2012.0	2012.0	2012.0
6.5°	2008.8	2008.8	2009.2	2009.2	2010.0	2009.2	2009.2	2008.8	2008.8	2008.8	2009.2
7°	2005.6	2005.6	2005.6	2006.0	2006.8	2006.0	2005.6	2005.6	2005.6	2005.6	2005.6
7.5°	2002.0	2002.0	2002.0	2002.0	2003.2	2002.0	2002.0	2002.0	2002.0	2002.0	2002.0
8°	1997.9	1997.9	1998.3	1998.3	1999.1	1998.3	1998.3	1997.9	1997.9	1997.9	1998.3
8.5°	1993.9	1993.9	1993.9	1993.9	1994.7	1993.9	1993.9	1993.9	1993.9	1993.9	1993.9
9°	1989.5	1989.5	1989.5	1989.5	1990.3	1989.5	1989.5	1989.5	1989.5	1989.5	1989.5
9.5°	1984.6	1984.6	1984.6	1984.6	1985.4	1984.6	1984.6	1984.6	1984.6	1984.6	1984.6
10°	1979.8	1979.8	1979.8	1979.8	1980.6	1979.8	1979.8	1979.8	1979.8	1979.8	1979.8
10.5°	1974.6	1974.6	1974.6	1974.2	1975.4	1974.2	1974.6	1974.6	1974.6	1974.6	1974.6
11°	1968.9	1968.9	1969.3	1968.9	1969.7	1968.9	1969.3	1968.9	1968.9	1968.9	1969.3
11.5°	1963.3	1963.3	1963.3	1962.9	1963.7	1962.9	1963.3	1963.3	1963.3	1963.3	1963.3
12°	1957.3	1957.3	1957.3	1956.9	1957.7	1956.9	1957.3	1957.3	1957.3	1957.3	1957.3
12.5°	1950.4	1950.8	1950.8	1950.4	1950.8	1950.4	1950.8	1950.8	1950.4	1950.8	1950.8
13°	1944.0	1944.4	1944.4	1943.6	1944.4	1943.6	1944.4	1944.4	1944.0	1944.4	1944.4
13.5°	1937.1	1937.1	1937.5	1936.7	1937.5	1936.7	1937.5	1937.1	1937.1	1937.1	1937.5
14°	1929.9	1930.3	1930.3	1929.5	1929.9	1929.5	1930.3	1930.3	1929.9	1930.3	1930.3
14.5°	1922.2	1922.6	1923.0	1922.2	1922.2	1922.2	1923.0	1922.6	1922.2	1922.6	1923.0
15°	1914.2	1915.0	1915.0	1914.2	1914.6	1914.2	1915.0	1915.0	1914.2	1915.0	1915.0
15.5°	1906.1	1906.9	1906.9	1906.1	1906.1	1906.1	1906.9	1906.9	1906.1	1906.9	1906.9
16°	1897.7	1898.5	1898.9	1897.7	1897.7	1897.7	1898.9	1898.5	1897.7	1898.5	1898.9
16.5°	1889.2	1889.6	1890.4	1889.2	1888.8	1889.2	1890.4	1889.6	1889.2	1889.6	1890.4
17°	1880.3	1880.7	1881.5	1879.9	1879.9	1879.9	1881.5	1880.7	1880.3	1880.7	1881.5
17.5°	1870.7	1871.5	1872.3	1870.7	1870.7	1870.7	1872.3	1871.5	1870.7	1871.5	1872.3
18°	1861.4	1861.8	1862.6	1861.4	1861.0	1861.4	1862.6	1861.8	1861.4	1861.8	1862.6
18.5°	1851.7	1852.1	1852.9	1851.3	1850.9	1851.3	1852.9	1852.1	1851.7	1852.1	1852.9
19°	1841.3	1842.1	1842.9	1841.3	1840.5	1841.3	1842.9	1842.1	1841.3	1842.1	1842.9
19.5°	1831.2	1831.6	1832.4	1830.8	1830.4	1830.8	1832.4	1831.6	1831.2	1831.6	1832.4
20°	1820.3	1821.1	1821.9	1819.9	1819.5	1819.9	1821.9	1821.1	1820.3	1821.1	1821.9
20.5°	1809.9	1810.3	1811.1	1809.1	1808.6	1809.1	1811.1	1810.3	1809.9	1810.3	1811.1
21°	1798.6	1799.0	1799.8	1797.8	1797.4	1797.8	1799.8	1799.0	1798.6	1799.0	1799.8



TEST NUMBER: P776328

CATALOG NUMBER: HCDJBL3040CSD-HCD4TSQMB-4000lm-4000K

**CANDELA DISTRIBUTION (continued):**

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
22.5°	1763.9	1763.9	1764.3	1762.7	1762.7	1762.7	1764.3	1763.9	1763.9	1763.9	1764.3
23°	1751.9	1751.9	1751.9	1750.7	1750.3	1750.7	1751.9	1751.9	1751.9	1751.9	1751.9
23.5°	1739.8	1739.8	1739.0	1738.2	1738.2	1738.2	1739.0	1739.8	1739.8	1739.8	1739.0
24°	1727.3	1727.3	1726.1	1725.7	1726.5	1725.7	1726.1	1727.3	1727.3	1727.3	1726.1
24.5°	1714.8	1714.4	1712.8	1712.8	1714.0	1712.8	1712.8	1714.4	1714.8	1714.4	1712.8
25°	1703.1	1701.1	1699.1	1699.5	1696.3	1699.5	1699.1	1701.1	1703.1	1701.1	1699.1
25.5°	1689.4	1688.2	1685.4	1686.6	1679.4	1686.6	1685.4	1688.2	1689.4	1688.2	1685.4
26°	1666.5	1674.9	1671.3	1673.7	1662.5	1673.7	1671.3	1674.9	1666.5	1674.9	1671.3
26.5°	1647.2	1661.7	1657.2	1660.0	1637.9	1660.0	1657.2	1661.7	1647.2	1661.7	1657.2
27°	1623.8	1649.2	1642.7	1641.1	1609.3	1641.1	1642.7	1649.2	1623.8	1649.2	1642.7
27.5°	1594.8	1631.9	1627.8	1623.8	1583.5	1623.8	1627.8	1631.9	1594.8	1631.9	1627.8
28°	1564.2	1608.9	1612.9	1605.3	1554.9	1605.3	1612.9	1608.9	1564.2	1608.9	1612.9
28.5°	1533.2	1589.2	1598.0	1579.1	1525.1	1579.1	1598.0	1589.2	1533.2	1589.2	1598.0
29°	1500.6	1564.6	1582.7	1551.7	1496.1	1551.7	1582.7	1564.6	1500.6	1564.6	1582.7
29.5°	1467.5	1535.6	1567.4	1525.1	1464.7	1525.1	1567.4	1535.6	1467.5	1535.6	1567.4
30°	1433.3	1505.8	1551.7	1496.9	1432.9	1496.9	1551.7	1505.8	1433.3	1505.8	1551.7
30.5°	1398.3	1474.4	1536.4	1467.5	1399.9	1467.5	1536.4	1474.4	1398.3	1474.4	1536.4
31°	1362.0	1443.0	1520.7	1437.3	1366.1	1437.3	1520.7	1443.0	1362.0	1443.0	1520.7
31.5°	1325.4	1410.4	1505.0	1407.1	1329.4	1407.1	1505.0	1410.4	1325.4	1410.4	1505.0
32°	1287.9	1377.3	1489.3	1376.1	1291.9	1376.1	1489.3	1377.3	1287.9	1377.3	1489.3
32.5°	1249.7	1343.1	1474.0	1344.3	1254.1	1344.3	1474.0	1343.1	1249.7	1343.1	1474.0
33°	1211.4	1308.9	1458.3	1310.9	1216.6	1310.9	1458.3	1308.9	1211.4	1308.9	1458.3
33.5°	1172.7	1273.0	1440.2	1276.6	1176.0	1276.6	1440.2	1273.0	1172.7	1273.0	1440.2
34°	1134.9	1236.8	1420.8	1240.8	1137.3	1240.8	1420.8	1236.8	1134.9	1236.8	1420.8
34.5°	1096.6	1200.1	1398.3	1203.8	1099.0	1203.8	1398.3	1200.1	1096.6	1200.1	1398.3
35°	1058.8	1163.5	1370.9	1166.3	1062.4	1166.3	1370.9	1163.5	1058.8	1163.5	1370.9
35.5°	1021.7	1127.2	1341.5	1129.7	1024.5	1129.7	1341.5	1127.2	1021.7	1127.2	1341.5
36°	985.1	1090.2	1308.9	1092.2	989.1	1092.2	1308.9	1090.2	985.1	1090.2	1308.9
36.5°	948.0	1053.9	1273.8	1055.5	952.9	1055.5	1273.8	1053.9	948.0	1053.9	1273.8
37°	911.4	1017.7	1236.8	1019.3	917.0	1019.3	1236.8	1017.7	911.4	1017.7	1236.8
37.5°	874.3	981.8	1199.3	984.3	880.8	984.3	1199.3	981.8	874.3	981.8	1199.3
38°	837.3	946.0	1160.7	948.8	844.5	948.8	1160.7	946.0	837.3	946.0	1160.7
38.5°	799.8	911.4	1122.4	914.6	807.5	914.6	1122.4	911.4	799.8	911.4	1122.4
39°	763.6	876.3	1083.7	880.4	771.2	880.4	1083.7	876.3	763.6	876.3	1083.7
39.5°	727.7	841.3	1044.7	846.5	733.8	846.5	1044.7	841.3	727.7	841.3	1044.7
40°	691.1	805.9	1004.8	811.9	697.9	811.9	1004.8	805.9	691.1	805.9	1004.8
40.5°	655.2	770.8	964.5	776.9	661.7	776.9	964.5	770.8	655.2	770.8	964.5
41°	620.6	736.2	924.3	742.2	626.6	742.2	924.3	736.2	620.6	736.2	924.3
41.5°	586.0	701.6	883.6	707.6	592.4	707.6	883.6	701.6	586.0	701.6	883.6
42°	552.5	667.7	842.9	673.0	559.4	673.0	842.9	667.7	552.5	667.7	842.9
42.5°	519.5	633.9	803.0	639.5	526.8	639.5	803.0	633.9	519.5	633.9	803.0
43°	486.9	600.9	763.2	605.7	494.5	605.7	763.2	600.9	486.9	600.9	763.2
43.5°	454.3	568.2	724.1	573.9	463.1	573.9	724.1	568.2	454.3	568.2	724.1



TEST NUMBER: P776328

CATALOG NUMBER: HCDJBL3040CSD-HCD4TSQMB-4000lm-4000K

**CANDELA DISTRIBUTION (continued):**

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
45°	362.1	474.0	612.1	480.1	371.7	480.1	612.1	474.0	362.1	474.0	612.1
45.5°	333.9	443.8	577.1	450.7	343.1	450.7	577.1	443.8	333.9	443.8	577.1
46°	306.9	414.4	543.7	421.7	315.7	421.7	543.7	414.4	306.9	414.4	543.7
46.5°	279.5	384.6	510.7	392.7	289.6	392.7	510.7	384.6	279.5	384.6	510.7
47°	253.7	356.4	478.4	364.1	265.0	364.1	478.4	356.4	253.7	356.4	478.4
47.5°	227.9	329.0	447.4	335.9	240.8	335.9	447.4	329.0	227.9	329.0	447.4
48°	205.4	302.9	417.6	309.7	217.5	309.7	417.6	302.9	205.4	302.9	417.6
48.5°	183.6	277.1	389.0	284.7	196.5	284.7	389.0	277.1	183.6	277.1	389.0
49°	165.5	251.7	360.4	260.2	177.2	260.2	360.4	251.7	165.5	251.7	360.4
49.5°	148.2	227.9	333.1	236.8	158.7	236.8	333.1	227.9	148.2	227.9	333.1
50°	130.9	205.4	306.1	214.3	140.6	214.3	306.1	205.4	130.9	205.4	306.1
50.5°	114.4	184.0	281.1	193.3	122.8	193.3	281.1	184.0	114.4	184.0	281.1
51°	98.7	165.5	256.9	174.4	107.9	174.4	256.9	165.5	98.7	165.5	256.9
51.5°	85.8	147.8	234.0	155.9	93.8	155.9	234.0	147.8	85.8	147.8	234.0
52°	73.3	130.5	211.8	138.1	80.5	138.1	211.8	130.5	73.3	130.5	211.8
52.5°	61.6	113.6	190.9	121.2	68.1	121.2	190.9	113.6	61.6	113.6	190.9
53°	50.7	98.3	172.4	106.3	56.4	106.3	172.4	98.3	50.7	98.3	172.4
53.5°	41.9	84.6	154.2	92.6	45.1	92.6	154.2	84.6	41.9	84.6	154.2
54°	32.6	72.1	137.3	79.3	35.8	79.3	137.3	72.1	32.6	72.1	137.3
54.5°	23.8	60.4	121.6	66.9	29.0	66.9	121.6	60.4	23.8	60.4	121.6
55°	17.3	50.3	106.3	55.2	22.2	55.2	106.3	50.3	17.3	50.3	106.3
55.5°	10.9	41.1	92.6	44.3	15.3	44.3	92.6	41.1	10.9	41.1	92.6
56°	7.2	32.2	79.3	34.6	8.5	34.6	79.3	32.2	7.2	32.2	79.3
56.5°	5.6	23.4	68.1	26.6	5.2	26.6	68.1	23.4	5.6	23.4	68.1
57°	4.0	15.3	58.0	19.3	4.4	19.3	58.0	15.3	4.0	15.3	58.0
57.5°	4.0	9.7	48.7	12.9	4.0	12.9	48.7	9.7	4.0	9.7	48.7
58°	3.6	6.0	40.7	8.5	4.0	8.5	40.7	6.0	3.6	6.0	40.7
58.5°	3.6	4.0	33.8	6.0	3.6	6.0	33.8	4.0	3.6	4.0	33.8
59°	3.2	3.2	27.4	4.4	3.6	4.4	27.4	3.2	3.2	3.2	27.4
59.5°	3.2	3.2	22.2	3.2	3.6	3.2	22.2	3.2	3.2	3.2	22.2
60°	3.2	3.2	17.7	3.2	3.2	3.2	17.7	3.2	3.2	3.2	17.7
60.5°	2.8	2.8	13.7	3.2	3.2	3.2	13.7	2.8	2.8	2.8	13.7
61°	2.8	2.8	10.9	2.8	3.2	2.8	10.9	2.8	2.8	2.8	10.9
61.5°	2.8	2.8	8.1	2.8	2.8	2.8	8.1	2.8	2.8	2.8	8.1
62°	2.4	2.4	6.0	2.8	2.8	2.8	6.0	2.4	2.4	2.4	6.0
62.5°	2.4	2.4	4.4	2.4	2.8	2.4	4.4	2.4	2.4	2.4	4.4
63°	2.4	2.4	3.2	2.4	2.4	2.4	3.2	2.4	2.4	2.4	3.2
63.5°	2.4	2.0	2.4	2.4	2.4	2.4	2.4	2.0	2.4	2.0	2.4
64°	2.0	2.0	2.0	2.0	2.4	2.0	2.0	2.0	2.0	2.0	2.0
64.5°	2.0	2.0	1.6	2.0	2.4	2.0	1.6	2.0	2.0	2.0	1.6
65°	2.0	2.0	1.6	2.0	2.0	2.0	1.6	2.0	2.0	2.0	1.6
65.5°	2.0	1.6	1.6	2.0	2.0	2.0	1.6	1.6	2.0	1.6	1.6
66°	2.0	1.6	1.2	1.6	2.0	1.6	1.2	1.6	2.0	1.6	1.2





TEST NUMBER: P776328

CATALOG NUMBER: HCDJBL3040CSD-HCD4TSQMB-4000lm-4000K

**CANDELA DISTRIBUTION (continued):**

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
67.5°	1.6	1.6	1.2	1.6	1.6	1.6	1.2	1.6	1.6	1.6	1.2
68°	1.6	1.2	1.2	1.6	1.6	1.6	1.2	1.2	1.6	1.2	1.2
68.5°	1.6	1.2	0.8	1.2	1.6	1.2	0.8	1.2	1.6	1.2	0.8
69°	1.2	1.2	0.8	1.2	1.6	1.2	0.8	1.2	1.2	1.2	0.8
69.5°	1.2	1.2	0.8	1.2	1.6	1.2	0.8	1.2	1.2	1.2	0.8
70°	1.2	1.2	0.8	1.2	1.2	1.2	0.8	1.2	1.2	1.2	0.8
70.5°	1.2	1.2	0.8	1.2	1.2	1.2	0.8	1.2	1.2	1.2	0.8
71°	1.2	0.8	0.8	1.2	1.2	1.2	0.8	0.8	1.2	0.8	0.8
71.5°	1.2	0.8	0.8	0.8	1.2	0.8	0.8	0.8	1.2	0.8	0.8
72°	1.2	0.8	0.8	0.8	1.2	0.8	0.8	0.8	1.2	0.8	0.8
72.5°	0.8	0.8	0.4	0.8	1.2	0.8	0.4	0.8	0.8	0.8	0.4
73°	0.8	0.8	0.4	0.8	1.2	0.8	0.4	0.8	0.8	0.8	0.4
73.5°	0.8	0.8	0.4	0.8	0.8	0.8	0.4	0.8	0.8	0.8	0.4
74°	0.8	0.8	0.4	0.8	0.8	0.8	0.4	0.8	0.8	0.8	0.4
74.5°	0.8	0.8	0.4	0.8	0.8	0.8	0.4	0.8	0.8	0.8	0.4
75°	0.8	0.8	0.4	0.8	0.8	0.8	0.4	0.8	0.8	0.8	0.4
75.5°	0.8	0.4	0.4	0.8	0.8	0.8	0.4	0.4	0.8	0.4	0.4
76°	0.8	0.4	0.4	0.4	0.8	0.4	0.4	0.4	0.8	0.4	0.4
76.5°	0.4	0.4	0.4	0.4	0.8	0.4	0.4	0.4	0.4	0.4	0.4
77°	0.4	0.4	0.4	0.4	0.8	0.4	0.4	0.4	0.4	0.4	0.4
77.5°	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
78°	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
78.5°	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
79°	0.4	0.4	0.0	0.4	0.4	0.4	0.0	0.4	0.4	0.4	0.0
79.5°	0.4	0.4	0.0	0.4	0.4	0.4	0.0	0.4	0.4	0.4	0.0
80°	0.4	0.4	0.0	0.4	0.4	0.4	0.0	0.4	0.4	0.4	0.0
80.5°	0.4	0.4	0.0	0.4	0.4	0.4	0.0	0.4	0.4	0.4	0.0
81°	0.4	0.4	0.0	0.4	0.4	0.4	0.0	0.4	0.4	0.4	0.0
81.5°	0.4	0.0	0.0	0.4	0.4	0.4	0.0	0.0	0.4	0.0	0.0
82°	0.0	0.0	0.0	0.0	0.4	0.0	0.0	0.0	0.0	0.0	0.0
82.5°	0.0	0.0	0.0	0.0	0.4	0.0	0.0	0.0	0.0	0.0	0.0
83°	0.0	0.0	0.0	0.0	0.4	0.0	0.0	0.0	0.0	0.0	0.0
83.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
84°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
84.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
85°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
85.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
86°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
86.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
87°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
87.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
88°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
88.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0



TEST NUMBER: P776328

CATALOG NUMBER: HCDJBL3040CSD-HCD4TSQMB-4000lm-4000K

**CANDELA DISTRIBUTION (continued):**

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0



TEST NUMBER: P776328

CATALOG NUMBER: HCDJBL3040CSD-HCD4TSQMB-4000lm-4000K

**CANDELA DISTRIBUTION (continued):**

	247.5°	270°	292.5°	315°	337.5°	360°
0°	2030.1	2030.1	2030.1	2030.1	2030.1	2030.1
0.5°	2030.1	2031.4	2030.1	2029.7	2029.7	2029.7
1°	2029.7	2031.0	2029.7	2029.3	2029.3	2029.3
1.5°	2028.9	2030.1	2028.9	2028.9	2028.9	2028.5
2°	2028.1	2029.3	2028.1	2028.1	2027.7	2027.7
2.5°	2027.3	2028.1	2027.3	2026.9	2026.5	2026.5
3°	2025.7	2026.9	2025.7	2025.7	2025.3	2025.3
3.5°	2024.1	2025.3	2024.1	2024.1	2023.7	2023.7
4°	2022.5	2023.3	2022.5	2022.1	2022.1	2022.1
4.5°	2020.1	2021.3	2020.1	2020.1	2020.1	2020.1
5°	2017.7	2018.9	2017.7	2017.7	2017.7	2017.7
5.5°	2015.2	2016.1	2015.2	2015.2	2014.8	2014.8
6°	2012.4	2013.2	2012.4	2012.0	2012.0	2012.0
6.5°	2009.2	2010.0	2009.2	2009.2	2008.8	2008.8
7°	2006.0	2006.8	2006.0	2005.6	2005.6	2005.6
7.5°	2002.0	2003.2	2002.0	2002.0	2002.0	2002.0
8°	1998.3	1999.1	1998.3	1998.3	1997.9	1997.9
8.5°	1993.9	1994.7	1993.9	1993.9	1993.9	1993.9
9°	1989.5	1990.3	1989.5	1989.5	1989.5	1989.5
9.5°	1984.6	1985.4	1984.6	1984.6	1984.6	1984.6
10°	1979.8	1980.6	1979.8	1979.8	1979.8	1979.8
10.5°	1974.2	1975.4	1974.2	1974.6	1974.6	1974.6
11°	1968.9	1969.7	1968.9	1969.3	1968.9	1968.9
11.5°	1962.9	1963.7	1962.9	1963.3	1963.3	1963.3
12°	1956.9	1957.7	1956.9	1957.3	1957.3	1957.3
12.5°	1950.4	1950.8	1950.4	1950.8	1950.8	1950.4
13°	1943.6	1944.4	1943.6	1944.4	1944.4	1944.0
13.5°	1936.7	1937.5	1936.7	1937.5	1937.1	1937.1
14°	1929.5	1929.9	1929.5	1930.3	1930.3	1929.9
14.5°	1922.2	1922.2	1922.2	1923.0	1922.6	1922.2
15°	1914.2	1914.6	1914.2	1915.0	1915.0	1914.2
15.5°	1906.1	1906.1	1906.1	1906.9	1906.9	1906.1
16°	1897.7	1897.7	1897.7	1898.9	1898.5	1897.7
16.5°	1889.2	1888.8	1889.2	1890.4	1889.6	1889.2
17°	1879.9	1879.9	1879.9	1881.5	1880.7	1880.3
17.5°	1870.7	1870.7	1870.7	1872.3	1871.5	1870.7
18°	1861.4	1861.0	1861.4	1862.6	1861.8	1861.4
18.5°	1851.3	1850.9	1851.3	1852.9	1852.1	1851.7
19°	1841.3	1840.5	1841.3	1842.9	1842.1	1841.3
19.5°	1830.8	1830.4	1830.8	1832.4	1831.6	1831.2
20°	1819.9	1819.5	1819.9	1821.9	1821.1	1820.3
20.5°	1809.1	1808.6	1809.1	1811.1	1810.3	1809.9
21°	1797.8	1797.4	1797.8	1799.8	1799.0	1798.6



TEST NUMBER: P776328

CATALOG NUMBER: HCDJBL3040CSD-HCD4TSQMB-4000lm-4000K

**CANDELA DISTRIBUTION (continued):**

	247.5°	270°	292.5°	315°	337.5°	360°
22.5°	1762.7	1762.7	1762.7	1764.3	1763.9	1763.9
23°	1750.7	1750.3	1750.7	1751.9	1751.9	1751.9
23.5°	1738.2	1738.2	1738.2	1739.0	1739.8	1739.8
24°	1725.7	1726.5	1725.7	1726.1	1727.3	1727.3
24.5°	1712.8	1714.0	1712.8	1712.8	1714.4	1714.8
25°	1699.5	1696.3	1699.5	1699.1	1701.1	1703.1
25.5°	1686.6	1679.4	1686.6	1685.4	1688.2	1689.4
26°	1673.7	1662.5	1673.7	1671.3	1674.9	1666.5
26.5°	1660.0	1637.9	1660.0	1657.2	1661.7	1647.2
27°	1641.1	1609.3	1641.1	1642.7	1649.2	1623.8
27.5°	1623.8	1583.5	1623.8	1627.8	1631.9	1594.8
28°	1605.3	1554.9	1605.3	1612.9	1608.9	1564.2
28.5°	1579.1	1525.1	1579.1	1598.0	1589.2	1533.2
29°	1551.7	1496.1	1551.7	1582.7	1564.6	1500.6
29.5°	1525.1	1464.7	1525.1	1567.4	1535.6	1467.5
30°	1496.9	1432.9	1496.9	1551.7	1505.8	1433.3
30.5°	1467.5	1399.9	1467.5	1536.4	1474.4	1398.3
31°	1437.3	1366.1	1437.3	1520.7	1443.0	1362.0
31.5°	1407.1	1329.4	1407.1	1505.0	1410.4	1325.4
32°	1376.1	1291.9	1376.1	1489.3	1377.3	1287.9
32.5°	1344.3	1254.1	1344.3	1474.0	1343.1	1249.7
33°	1310.9	1216.6	1310.9	1458.3	1308.9	1211.4
33.5°	1276.6	1176.0	1276.6	1440.2	1273.0	1172.7
34°	1240.8	1137.3	1240.8	1420.8	1236.8	1134.9
34.5°	1203.8	1099.0	1203.8	1398.3	1200.1	1096.6
35°	1166.3	1062.4	1166.3	1370.9	1163.5	1058.8
35.5°	1129.7	1024.5	1129.7	1341.5	1127.2	1021.7
36°	1092.2	989.1	1092.2	1308.9	1090.2	985.1
36.5°	1055.5	952.9	1055.5	1273.8	1053.9	948.0
37°	1019.3	917.0	1019.3	1236.8	1017.7	911.4
37.5°	984.3	880.8	984.3	1199.3	981.8	874.3
38°	948.8	844.5	948.8	1160.7	946.0	837.3
38.5°	914.6	807.5	914.6	1122.4	911.4	799.8
39°	880.4	771.2	880.4	1083.7	876.3	763.6
39.5°	846.5	733.8	846.5	1044.7	841.3	727.7
40°	811.9	697.9	811.9	1004.8	805.9	691.1
40.5°	776.9	661.7	776.9	964.5	770.8	655.2
41°	742.2	626.6	742.2	924.3	736.2	620.6
41.5°	707.6	592.4	707.6	883.6	701.6	586.0
42°	673.0	559.4	673.0	842.9	667.7	552.5
42.5°	639.5	526.8	639.5	803.0	633.9	519.5
43°	605.7	494.5	605.7	763.2	600.9	486.9
43.5°	573.9	463.1	573.9	724.1	568.2	454.3



TEST NUMBER: P776328

CATALOG NUMBER: HCDJBL3040CSD-HCD4TSQMB-4000lm-4000K

**CANDELA DISTRIBUTION (continued):**

	247.5°	270°	292.5°	315°	337.5°	360°
45°	480.1	371.7	480.1	612.1	474.0	362.1
45.5°	450.7	343.1	450.7	577.1	443.8	333.9
46°	421.7	315.7	421.7	543.7	414.4	306.9
46.5°	392.7	289.6	392.7	510.7	384.6	279.5
47°	364.1	265.0	364.1	478.4	356.4	253.7
47.5°	335.9	240.8	335.9	447.4	329.0	227.9
48°	309.7	217.5	309.7	417.6	302.9	205.4
48.5°	284.7	196.5	284.7	389.0	277.1	183.6
49°	260.2	177.2	260.2	360.4	251.7	165.5
49.5°	236.8	158.7	236.8	333.1	227.9	148.2
50°	214.3	140.6	214.3	306.1	205.4	130.9
50.5°	193.3	122.8	193.3	281.1	184.0	114.4
51°	174.4	107.9	174.4	256.9	165.5	98.7
51.5°	155.9	93.8	155.9	234.0	147.8	85.8
52°	138.1	80.5	138.1	211.8	130.5	73.3
52.5°	121.2	68.1	121.2	190.9	113.6	61.6
53°	106.3	56.4	106.3	172.4	98.3	50.7
53.5°	92.6	45.1	92.6	154.2	84.6	41.9
54°	79.3	35.8	79.3	137.3	72.1	32.6
54.5°	66.9	29.0	66.9	121.6	60.4	23.8
55°	55.2	22.2	55.2	106.3	50.3	17.3
55.5°	44.3	15.3	44.3	92.6	41.1	10.9
56°	34.6	8.5	34.6	79.3	32.2	7.2
56.5°	26.6	5.2	26.6	68.1	23.4	5.6
57°	19.3	4.4	19.3	58.0	15.3	4.0
57.5°	12.9	4.0	12.9	48.7	9.7	4.0
58°	8.5	4.0	8.5	40.7	6.0	3.6
58.5°	6.0	3.6	6.0	33.8	4.0	3.6
59°	4.4	3.6	4.4	27.4	3.2	3.2
59.5°	3.2	3.6	3.2	22.2	3.2	3.2
60°	3.2	3.2	3.2	17.7	3.2	3.2
60.5°	3.2	3.2	3.2	13.7	2.8	2.8
61°	2.8	3.2	2.8	10.9	2.8	2.8
61.5°	2.8	2.8	2.8	8.1	2.8	2.8
62°	2.8	2.8	2.8	6.0	2.4	2.4
62.5°	2.4	2.8	2.4	4.4	2.4	2.4
63°	2.4	2.4	2.4	3.2	2.4	2.4
63.5°	2.4	2.4	2.4	2.4	2.0	2.4
64°	2.0	2.4	2.0	2.0	2.0	2.0
64.5°	2.0	2.4	2.0	1.6	2.0	2.0
65°	2.0	2.0	2.0	1.6	2.0	2.0
65.5°	2.0	2.0	2.0	1.6	1.6	2.0
66°	1.6	2.0	1.6	1.2	1.6	2.0



TEST NUMBER: P776328

CATALOG NUMBER: HCDJBL3040CSD-HCD4TSQMB-4000lm-4000K

**CANDELA DISTRIBUTION (continued):**

	247.5°	270°	292.5°	315°	337.5°	360°
67.5°	1.6	1.6	1.6	1.2	1.6	1.6
68°	1.6	1.6	1.6	1.2	1.2	1.6
68.5°	1.2	1.6	1.2	0.8	1.2	1.6
69°	1.2	1.6	1.2	0.8	1.2	1.2
69.5°	1.2	1.6	1.2	0.8	1.2	1.2
70°	1.2	1.2	1.2	0.8	1.2	1.2
70.5°	1.2	1.2	1.2	0.8	1.2	1.2
71°	1.2	1.2	1.2	0.8	0.8	1.2
71.5°	0.8	1.2	0.8	0.8	0.8	1.2
72°	0.8	1.2	0.8	0.8	0.8	1.2
72.5°	0.8	1.2	0.8	0.4	0.8	0.8
73°	0.8	1.2	0.8	0.4	0.8	0.8
73.5°	0.8	0.8	0.8	0.4	0.8	0.8
74°	0.8	0.8	0.8	0.4	0.8	0.8
74.5°	0.8	0.8	0.8	0.4	0.8	0.8
75°	0.8	0.8	0.8	0.4	0.8	0.8
75.5°	0.8	0.8	0.8	0.4	0.4	0.8
76°	0.4	0.8	0.4	0.4	0.4	0.8
76.5°	0.4	0.8	0.4	0.4	0.4	0.4
77°	0.4	0.8	0.4	0.4	0.4	0.4
77.5°	0.4	0.4	0.4	0.4	0.4	0.4
78°	0.4	0.4	0.4	0.4	0.4	0.4
78.5°	0.4	0.4	0.4	0.4	0.4	0.4
79°	0.4	0.4	0.4	0.0	0.4	0.4
79.5°	0.4	0.4	0.4	0.0	0.4	0.4
80°	0.4	0.4	0.4	0.0	0.4	0.4
80.5°	0.4	0.4	0.4	0.0	0.4	0.4
81°	0.4	0.4	0.4	0.0	0.4	0.4
81.5°	0.4	0.4	0.4	0.0	0.0	0.4
82°	0.0	0.4	0.0	0.0	0.0	0.0
82.5°	0.0	0.4	0.0	0.0	0.0	0.0
83°	0.0	0.4	0.0	0.0	0.0	0.0
83.5°	0.0	0.0	0.0	0.0	0.0	0.0
84°	0.0	0.0	0.0	0.0	0.0	0.0
84.5°	0.0	0.0	0.0	0.0	0.0	0.0
85°	0.0	0.0	0.0	0.0	0.0	0.0
85.5°	0.0	0.0	0.0	0.0	0.0	0.0
86°	0.0	0.0	0.0	0.0	0.0	0.0
86.5°	0.0	0.0	0.0	0.0	0.0	0.0
87°	0.0	0.0	0.0	0.0	0.0	0.0
87.5°	0.0	0.0	0.0	0.0	0.0	0.0
88°	0.0	0.0	0.0	0.0	0.0	0.0
88.5°	0.0	0.0	0.0	0.0	0.0	0.0



TEST NUMBER: P776328

CATALOG NUMBER: HCDJBL3040CSD-HCD4TSQMB-4000lm-4000K

**CANDELA DISTRIBUTION (continued):**

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



Report Generated By 670245859 / DESKTOP-T8S5UU9



Signify Classified - Internal  
Cooper Lighting Solutions Photometric Lab  
1121 Highway 74 South  
Peachtree City, GA 30269

Scaled Data Report





— 0°-180°    - - 45°-225°    - - - - 90°-270°    - · - · 135°-315°

Signify Classified - Internal  
Cooper Lighting Solutions Photometric Lab  
1121 Highway 74 South  
Peachtree City, GA 30269

Scaled Data Report



Signify Classified - Internal  
Cooper Lighting Solutions Photometric Lab  
1121 Highway 74 South  
Peachtree City, GA 30269

Scaled Data Report





21.5°	1787.3	1787.7	1788.1	1786.5	1786.1	1786.5	1788.1	1787.7	1787.3	1787.7	1788.1
22°	1775.6	1776.0	1776.4	1774.4	1774.4	1774.4	1776.4	1776.0	1775.6	1776.0	1776.4



44°	422.9	536.0	685.4	541.7	431.7	541.7	685.4	536.0	422.9	536.0	685.4
44.5°	392.3	505.0	648.4	510.7	401.1	510.7	648.4	505.0	392.3	505.0	648.4



66.5°	1.6	1.6	1.2	1.6	2.0	1.6	1.2	1.6	1.6	1.6	1.2
67°	1.6	1.6	1.2	1.6	1.6	1.6	1.2	1.6	1.6	1.6	1.2



89°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
89.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0



Signify Classified - Internal  
Cooper Lighting Solutions Photometric Lab  
1121 Highway 74 South  
Peachtree City, GA 30269

Scaled Data Report





21.5°	1786.5	1786.1	1786.5	1788.1	1787.7	1787.3
22°	1774.4	1774.4	1774.4	1776.4	1776.0	1775.6



44°	541.7	431.7	541.7	685.4	536.0	422.9
44.5°	510.7	401.1	510.7	648.4	505.0	392.3

Signify Classified - Internal  
Cooper Lighting Solutions Photometric Lab  
1121 Highway 74 South  
Peachtree City, GA 30269

Scaled Data Report



66.5°	1.6	2.0	1.6	1.2	1.6	1.6
67°	1.6	1.6	1.6	1.2	1.6	1.6

Signify Classified - Internal  
Cooper Lighting Solutions Photometric Lab  
1121 Highway 74 South  
Peachtree City, GA 30269

Scaled Data Report



89°	0.0	0.0	0.0	0.0	0.0	0.0
89.5°	0.0	0.0	0.0	0.0	0.0	0.0

Signify Classified - Internal  
Cooper Lighting Solutions Photometric Lab  
1121 Highway 74 South  
Peachtree City, GA 30269

Scaled Data Report



(END OF REPORT)