

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: P776436

Luminaire Tested: HCDJBL3040CSD-HCD81TRC-4000lm-3000K

Issue Date: 2/13/2024

Test Information

Test Method: LM-79-2019
Report Number: P776436
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (A2312156B042-HCD81TRC)
Test Lab:
Issue Date: 2/13/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: HALO COMMERCIAL
Catalog Number: HCDJBL3040CSD-HCD81TRC-4000lm-3000K
Description: 8 INCH ROUND SHALLOW-WIDE SPECULAR CLEAR TRIM
Light Source: SELECTABLE LUMENS AND CCT ARRAY 90CRI / 3000K CCT
Ballast/Driver: -

Summary

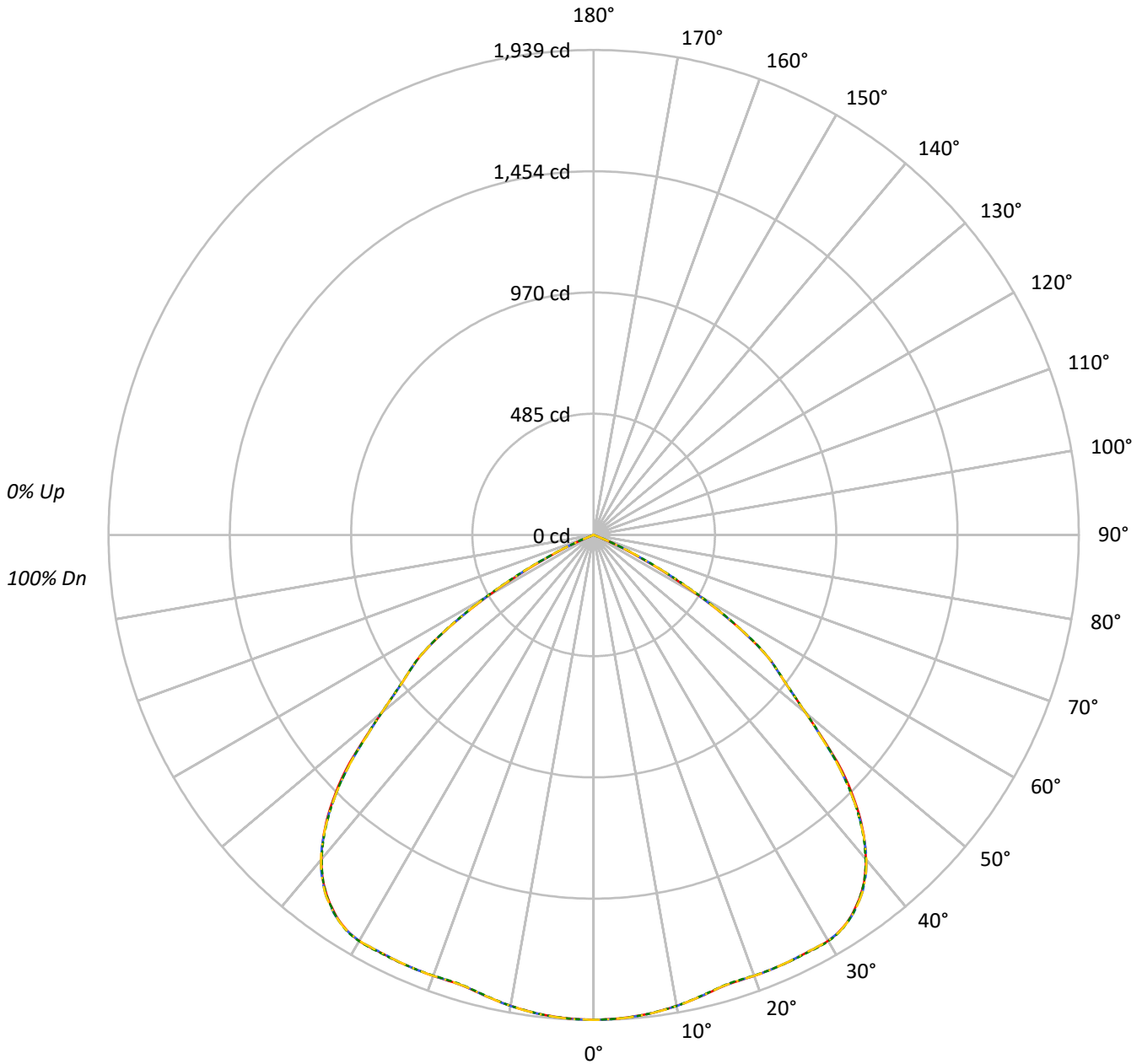
Lumens per Lamp: N/A
Luminaire Lumens: 4745.0 lumens
Efficiency: N/A
Efficacy: 123.2 lumens/watt
Spacing Criteria (0/90/45): 1.44 / 1.44 / 1.44
Luminous Opening: Circular (Dia: 0.67' x H: 0')
CIE Type: Direct

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



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Luminous Intensity Polar Plot





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COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

RF	20									20									20									20									
RC	80									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	111	108	105	102	109	106	103	100	102	99	97	98	96	94	94	93	91	89																			
2	103	97	91	87	101	95	90	86	91	87	84	88	85	82	85	83	80	78																			
3	95	87	80	74	93	85	79	74	82	77	73	80	75	71	77	73	70	68																			
4	88	78	70	64	86	77	69	64	74	68	63	72	67	62	70	65	62	60																			
5	81	70	62	56	80	69	62	56	67	60	55	65	59	55	63	58	54	52																			
6	75	63	55	50	74	63	55	49	61	54	49	59	53	49	58	52	48	46																			
7	70	58	50	44	68	57	49	44	55	49	44	54	48	43	53	47	43	41																			
8	65	53	45	39	64	52	45	39	51	44	39	50	43	39	48	43	39	37																			
9	61	48	41	35	60	48	40	35	47	40	35	46	39	35	45	39	35	33																			
10	57	45	37	32	56	44	37	32	43	37	32	42	36	32	41	36	32	30																			

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°	270°
0°	59186	59186	59186	59186
5°	59198	59207	59198	59207
10°	59274	59262	59274	59262
15°	59504	59444	59504	59444
20°	60951	60912	60951	60912
25°	63209	63219	63209	63219
30°	66065	66121	66065	66121
35°	67918	67963	67918	67963
40°	67466	67386	67466	67386
45°	63029	62692	63029	62692
50°	52527	52622	52527	52622
55°	45116	45217	45116	45217
60°	29688	30500	29688	30500
65°	10547	12079	10547	12079
70°	312	598	312	598
75°	142	189	142	189
80°	70	141	70	141
85°	0	140	0	140

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 63029 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	183.8	3.9
10°-20°	534.1	11.3
20°-30°	868.2	18.3
30°-40°	1135.8	23.9
40°-50°	1103.5	23.3
50°-60°	733.1	15.4
60°-70°	184.6	3.9
70°-80°	1.7	0.0
80°-90°	0.2	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°	1586.2	33.4
0°-40°	2722.0	57.4
0°-60°	4558.5	96.1
0°-90°	4745.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4745.0	100.0

CANDELA DISTRIBUTION:

	0°	90°	180°	270°	360°	Flux
0°	1939	1939	1939	1939	1939	
5°	1932	1932	1932	1932	1932	184
15°	1883	1881	1883	1881	1883	534
25°	1876	1877	1876	1877	1876	868
35°	1822	1824	1822	1824	1822	1135
45°	1460	1452	1460	1452	1460	1106
55°	848	850	848	850	848	731
65°	146	167	146	167	146	174
75°	1	2	1	2	1	1
85°	0	0	0	0	0	0
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°	1938.6	1938.6	1938.6	1938.6	1938.6	1938.6	1938.6	1938.6	1938.6	1938.6	1938.6
0.5°	1938.2	1938.2	1939.0	1939.4	1938.2	1939.4	1939.0	1938.2	1938.2	1938.2	1939.0
1°	1937.8	1938.2	1938.6	1939.0	1938.2	1939.0	1938.6	1938.2	1937.8	1938.2	1938.6
1.5°	1937.4	1937.8	1938.2	1938.6	1937.8	1938.6	1938.2	1937.8	1937.4	1937.8	1938.2
2°	1937.0	1937.0	1937.8	1938.2	1937.4	1938.2	1937.8	1937.0	1937.0	1937.0	1937.8
2.5°	1936.3	1936.6	1937.0	1937.4	1936.6	1937.4	1937.0	1936.6	1936.3	1936.6	1937.0
3°	1935.9	1935.9	1936.6	1937.0	1935.9	1937.0	1936.6	1935.9	1935.9	1935.9	1936.6
3.5°	1935.1	1935.1	1935.9	1935.9	1935.1	1935.9	1935.9	1935.1	1935.1	1935.1	1935.9
4°	1933.9	1934.3	1934.7	1935.1	1933.9	1935.1	1934.7	1934.3	1933.9	1934.3	1934.7
4.5°	1932.7	1933.1	1933.5	1933.9	1933.1	1933.9	1933.5	1933.1	1932.7	1933.1	1933.5
5°	1931.6	1931.9	1932.3	1932.7	1931.9	1932.7	1932.3	1931.9	1931.6	1931.9	1932.3
5.5°	1930.4	1930.8	1931.2	1931.6	1930.8	1931.6	1931.2	1930.8	1930.4	1930.8	1931.2
6°	1928.8	1929.2	1929.6	1930.0	1929.2	1930.0	1929.6	1929.2	1928.8	1929.2	1929.6
6.5°	1927.3	1927.6	1928.0	1928.4	1927.3	1928.4	1928.0	1927.6	1927.3	1927.6	1928.0
7°	1925.7	1925.7	1926.1	1926.5	1925.3	1926.5	1926.1	1925.7	1925.7	1925.7	1926.1
7.5°	1923.7	1923.7	1924.1	1924.1	1923.3	1924.1	1924.1	1923.7	1923.7	1923.7	1924.1
8°	1921.4	1921.8	1921.8	1922.2	1921.4	1922.2	1921.8	1921.8	1921.4	1921.8	1921.8
8.5°	1919.0	1919.4	1919.8	1919.8	1919.0	1919.8	1919.8	1919.4	1919.0	1919.4	1919.8
9°	1917.1	1917.1	1917.5	1917.5	1916.7	1917.5	1917.5	1917.1	1917.1	1917.1	1917.5
9.5°	1914.3	1914.7	1914.7	1915.1	1914.3	1915.1	1914.7	1914.7	1914.3	1914.7	1914.7
10°	1912.0	1912.0	1912.4	1912.4	1911.6	1912.4	1912.4	1912.0	1912.0	1912.0	1912.4
10.5°	1909.2	1909.2	1909.6	1909.6	1908.9	1909.6	1909.6	1909.2	1909.2	1909.2	1909.6
11°	1906.5	1906.5	1906.9	1906.9	1905.7	1906.9	1906.9	1906.5	1906.5	1906.5	1906.9
11.5°	1903.4	1903.4	1903.8	1903.8	1903.0	1903.8	1903.8	1903.4	1903.4	1903.4	1903.8
12°	1900.6	1900.6	1900.6	1900.6	1899.8	1900.6	1900.6	1900.6	1900.6	1900.6	1900.6
12.5°	1897.5	1897.5	1897.5	1897.5	1896.7	1897.5	1897.5	1897.5	1897.5	1897.5	1897.5
13°	1894.8	1894.4	1894.8	1894.4	1893.6	1894.4	1894.8	1894.4	1894.8	1894.4	1894.8
13.5°	1891.6	1891.2	1891.2	1891.2	1890.1	1891.2	1891.2	1891.2	1891.6	1891.2	1891.2
14°	1888.5	1888.5	1888.1	1888.1	1886.9	1888.1	1888.1	1888.5	1888.5	1888.5	1888.1
14.5°	1885.4	1885.4	1885.0	1885.0	1883.8	1885.0	1885.0	1885.4	1885.4	1885.4	1885.0
15°	1882.6	1882.2	1881.8	1881.8	1880.7	1881.8	1881.8	1882.2	1882.6	1882.2	1881.8
15.5°	1879.9	1879.5	1879.1	1878.7	1877.9	1878.7	1879.1	1879.5	1879.9	1879.5	1879.1
16°	1877.9	1877.5	1877.1	1876.4	1875.6	1876.4	1877.1	1877.5	1877.9	1877.5	1877.1
16.5°	1876.4	1876.0	1875.6	1874.4	1874.0	1874.4	1875.6	1876.0	1876.4	1876.0	1875.6
17°	1875.2	1875.2	1874.8	1873.6	1872.8	1873.6	1874.8	1875.2	1875.2	1875.2	1874.8
17.5°	1874.8	1874.8	1874.0	1873.2	1872.8	1873.2	1874.0	1874.8	1874.8	1874.8	1874.0
18°	1874.8	1874.8	1874.0	1873.6	1872.8	1873.6	1874.0	1874.8	1874.8	1874.8	1874.0
18.5°	1874.8	1874.8	1874.4	1873.6	1872.8	1873.6	1874.4	1874.8	1874.8	1874.8	1874.4
19°	1875.2	1875.2	1874.8	1874.4	1873.6	1874.4	1874.8	1875.2	1875.2	1875.2	1874.8
19.5°	1875.6	1875.6	1875.2	1874.8	1874.0	1874.8	1875.2	1875.6	1875.6	1875.6	1875.2
20°	1876.0	1876.0	1875.6	1875.2	1874.8	1875.2	1875.6	1876.0	1876.0	1876.0	1875.6
20.5°	1876.4	1876.0	1876.0	1876.0	1875.2	1876.0	1876.0	1876.0	1876.4	1876.0	1876.0
21°	1876.4	1876.4	1876.4	1876.4	1876.0	1876.4	1876.4	1876.4	1876.4	1876.4	1876.4



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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°	1877.1	1876.7	1876.7	1877.1	1877.1	1877.1	1876.7	1876.7	1877.1	1876.7	1876.7
23°	1877.1	1876.7	1876.7	1877.5	1877.1	1877.5	1876.7	1876.7	1877.1	1876.7	1876.7
23.5°	1877.1	1876.7	1876.4	1877.1	1877.1	1877.1	1876.4	1876.7	1877.1	1876.7	1876.4
24°	1876.7	1876.4	1876.0	1877.1	1877.1	1877.1	1876.0	1876.4	1876.7	1876.4	1876.0
24.5°	1876.7	1876.0	1876.0	1877.1	1877.1	1877.1	1876.0	1876.0	1876.7	1876.0	1876.0
25°	1876.4	1875.6	1875.6	1876.7	1876.7	1876.7	1875.6	1875.6	1876.4	1875.6	1875.6
25.5°	1876.0	1875.2	1875.2	1876.7	1876.7	1876.7	1875.2	1875.2	1876.0	1875.2	1875.2
26°	1875.2	1874.8	1874.4	1876.4	1876.4	1876.4	1874.4	1874.8	1875.2	1874.8	1874.4
26.5°	1874.8	1874.4	1874.0	1876.0	1876.0	1876.0	1874.0	1874.4	1874.8	1874.4	1874.0
27°	1874.8	1874.0	1873.6	1875.6	1876.0	1875.6	1873.6	1874.0	1874.8	1874.0	1873.6
27.5°	1874.8	1874.4	1873.6	1875.6	1876.0	1875.6	1873.6	1874.4	1874.8	1874.4	1873.6
28°	1875.2	1874.4	1874.0	1876.0	1876.4	1876.0	1874.0	1874.4	1875.2	1874.4	1874.0
28.5°	1875.6	1874.8	1874.0	1876.4	1876.7	1876.4	1874.0	1874.8	1875.6	1874.8	1874.0
29°	1875.6	1874.8	1874.0	1876.7	1876.7	1876.7	1874.0	1874.8	1875.6	1874.8	1874.0
29.5°	1875.2	1874.4	1874.0	1876.4	1876.4	1876.4	1874.0	1874.4	1875.2	1874.4	1874.0
30°	1874.0	1873.6	1873.2	1875.6	1875.6	1875.6	1873.2	1873.6	1874.0	1873.6	1873.2
30.5°	1872.4	1872.1	1872.1	1874.4	1874.0	1874.4	1872.1	1872.1	1872.4	1872.1	1872.1
31°	1870.1	1869.7	1869.7	1872.1	1871.7	1872.1	1869.7	1869.7	1870.1	1869.7	1869.7
31.5°	1867.0	1867.0	1867.4	1869.3	1868.5	1869.3	1867.4	1867.0	1867.0	1867.0	1867.4
32°	1862.7	1863.0	1863.4	1865.4	1864.6	1865.4	1863.4	1863.0	1862.7	1863.0	1863.4
32.5°	1858.0	1858.4	1859.1	1860.7	1859.9	1860.7	1859.1	1858.4	1858.0	1858.4	1859.1
33°	1852.5	1852.9	1854.0	1855.2	1854.0	1855.2	1854.0	1852.9	1852.5	1852.9	1854.0
33.5°	1846.2	1846.6	1848.2	1849.0	1847.8	1849.0	1848.2	1846.6	1846.2	1846.6	1848.2
34°	1838.8	1840.0	1841.5	1841.9	1840.3	1841.9	1841.5	1840.0	1838.8	1840.0	1841.5
34.5°	1830.9	1832.1	1834.1	1834.1	1832.5	1834.1	1834.1	1832.1	1830.9	1832.1	1834.1
35°	1822.3	1823.5	1825.9	1825.5	1823.5	1825.5	1825.9	1823.5	1822.3	1823.5	1825.9
35.5°	1813.3	1814.9	1816.9	1816.5	1814.5	1816.5	1816.9	1814.9	1813.3	1814.9	1816.9
36°	1803.5	1805.1	1807.5	1806.7	1804.3	1806.7	1807.5	1805.1	1803.5	1805.1	1807.5
36.5°	1793.0	1794.9	1797.3	1796.1	1793.8	1796.1	1797.3	1794.9	1793.0	1794.9	1797.3
37°	1781.6	1783.6	1785.9	1784.8	1782.0	1784.8	1785.9	1783.6	1781.6	1783.6	1785.9
37.5°	1769.5	1771.8	1773.4	1772.2	1769.5	1772.2	1773.4	1771.8	1769.5	1771.8	1773.4
38°	1756.2	1758.5	1760.5	1758.9	1756.2	1758.9	1760.5	1758.5	1756.2	1758.5	1760.5
38.5°	1741.7	1744.4	1746.4	1744.4	1741.3	1744.4	1746.4	1744.4	1741.7	1744.4	1746.4
39°	1726.4	1729.6	1730.7	1728.8	1725.6	1728.8	1730.7	1729.6	1726.4	1729.6	1730.7
39.5°	1710.4	1713.1	1713.9	1711.5	1708.4	1711.5	1713.9	1713.1	1710.4	1713.1	1713.9
40°	1692.8	1695.1	1695.9	1693.5	1690.8	1693.5	1695.9	1695.1	1692.8	1695.1	1695.9
40.5°	1674.4	1676.3	1676.7	1674.4	1671.2	1674.4	1676.7	1676.3	1674.4	1676.3	1676.7
41°	1654.8	1656.3	1656.0	1653.6	1651.3	1653.6	1656.0	1656.3	1654.8	1656.3	1656.0
41.5°	1634.0	1635.2	1634.4	1632.1	1630.1	1632.1	1634.4	1635.2	1634.0	1635.2	1634.4
42°	1612.5	1612.9	1611.3	1609.4	1608.2	1609.4	1611.3	1612.9	1612.5	1612.9	1611.3
42.5°	1590.2	1589.8	1587.4	1585.9	1584.7	1585.9	1587.4	1589.8	1590.2	1589.8	1587.4
43°	1566.3	1565.1	1562.4	1561.2	1560.4	1561.2	1562.4	1565.1	1566.3	1565.1	1562.4
43.5°	1541.3	1539.7	1535.8	1535.4	1535.0	1535.4	1535.8	1539.7	1541.3	1539.7	1535.8



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
45°	1459.8	1456.3	1450.8	1450.8	1452.0	1450.8	1450.8	1456.3	1459.8	1456.3	1450.8
45.5°	1430.1	1426.2	1419.9	1420.7	1421.9	1420.7	1419.9	1426.2	1430.1	1426.2	1419.9
46°	1398.8	1394.8	1388.6	1389.4	1391.3	1389.4	1388.6	1394.8	1398.8	1394.8	1388.6
46.5°	1365.9	1362.3	1356.1	1356.9	1358.8	1356.9	1356.1	1362.3	1365.9	1362.3	1356.1
47°	1331.4	1327.9	1322.0	1322.8	1324.4	1322.8	1322.0	1327.9	1331.4	1327.9	1322.0
47.5°	1293.1	1289.5	1283.7	1284.8	1286.4	1284.8	1283.7	1289.5	1293.1	1289.5	1283.7
48°	1251.9	1248.8	1244.1	1246.1	1247.6	1246.1	1244.1	1248.8	1251.9	1248.8	1244.1
48.5°	1213.6	1212.0	1207.7	1209.3	1211.2	1209.3	1207.7	1212.0	1213.6	1212.0	1207.7
49°	1177.6	1176.8	1174.4	1175.6	1176.8	1175.6	1174.4	1176.8	1177.6	1176.8	1174.4
49.5°	1141.9	1141.6	1140.4	1141.2	1141.9	1141.2	1140.4	1141.6	1141.9	1141.6	1140.4
50°	1105.9	1105.5	1105.5	1106.7	1107.9	1106.7	1105.5	1105.5	1105.9	1105.5	1105.5
50.5°	1072.3	1072.7	1072.3	1073.0	1073.8	1073.0	1072.3	1072.7	1072.3	1072.7	1072.3
51°	1041.7	1041.7	1041.3	1042.1	1041.3	1042.1	1041.3	1041.7	1041.7	1041.7	1041.3
51.5°	1012.8	1012.4	1012.0	1012.8	1013.1	1012.8	1012.0	1012.4	1012.8	1012.4	1012.0
52°	985.0	985.0	985.0	986.1	987.3	986.1	985.0	985.0	985.0	985.0	985.0
52.5°	959.5	959.9	959.5	961.1	962.3	961.1	959.5	959.9	959.5	959.9	959.5
53°	936.8	936.4	936.4	938.4	939.2	938.4	936.4	936.4	936.8	936.4	936.4
53.5°	915.3	915.3	915.3	916.8	917.6	916.8	915.3	915.3	915.3	915.3	915.3
54°	894.5	894.1	894.1	895.7	895.7	895.7	894.1	894.1	894.5	894.1	894.1
54.5°	872.2	872.2	872.2	873.4	873.8	873.4	872.2	872.2	872.2	872.2	872.2
55°	847.6	847.6	847.6	849.5	849.5	849.5	847.6	847.6	847.6	847.6	847.6
55.5°	819.0	819.0	819.4	822.1	821.3	822.1	819.4	819.0	819.0	819.0	819.4
56°	786.5	787.3	788.4	790.8	790.4	790.8	788.4	787.3	786.5	787.3	788.4
56.5°	752.8	753.2	754.8	757.1	757.1	757.1	754.8	753.2	752.8	753.2	754.8
57°	717.2	717.6	719.5	721.9	721.1	721.9	719.5	717.6	717.2	717.6	719.5
57.5°	680.0	680.8	682.3	685.5	685.5	685.5	682.3	680.8	680.0	680.8	682.3
58°	642.8	642.8	645.2	648.7	649.5	648.7	645.2	642.8	642.8	642.8	645.2
58.5°	603.7	604.8	606.8	611.1	612.7	611.1	606.8	604.8	603.7	604.8	606.8
59°	564.5	566.1	568.4	572.7	574.7	572.7	568.4	566.1	564.5	566.1	568.4
59.5°	525.0	526.9	529.7	535.2	537.5	535.2	529.7	526.9	525.0	526.9	529.7
60°	486.2	488.6	492.1	497.2	499.5	497.2	492.1	488.6	486.2	488.6	492.1
60.5°	447.5	450.2	454.9	460.4	462.7	460.4	454.9	450.2	447.5	450.2	454.9
61°	409.5	413.0	418.5	423.6	425.5	423.6	418.5	413.0	409.5	413.0	418.5
61.5°	373.5	376.6	383.3	388.0	389.5	388.0	383.3	376.6	373.5	376.6	383.3
62°	337.5	341.4	348.0	352.3	354.3	352.3	348.0	341.4	337.5	341.4	348.0
62.5°	302.2	306.5	314.0	317.9	321.0	317.9	314.0	306.5	302.2	306.5	314.0
63°	267.4	272.5	280.7	284.6	287.7	284.6	280.7	272.5	267.4	272.5	280.7
63.5°	234.9	239.2	248.2	252.5	255.6	252.5	248.2	239.2	234.9	239.2	248.2
64°	204.0	208.7	216.9	221.6	223.9	221.6	216.9	208.7	204.0	208.7	216.9
64.5°	174.2	179.3	187.1	191.4	193.4	191.4	187.1	179.3	174.2	179.3	187.1
65°	146.0	151.5	160.1	164.8	167.2	164.8	160.1	151.5	146.0	151.5	160.1
65.5°	121.0	126.8	133.9	139.0	142.1	139.0	133.9	126.8	121.0	126.8	133.9
66°	96.7	104.5	109.6	114.7	117.8	114.7	109.6	104.5	96.7	104.5	109.6



TEST NUMBER: P776436

CATALOG NUMBER: HCDJBL3040CSD-HCD81TRC-4000lm-3000K

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
67.5°	38.8	50.1	54.4	56.4	57.2	56.4	54.4	50.1	38.8	50.1	54.4
68°	23.5	36.0	39.9	42.3	44.2	42.3	39.9	36.0	23.5	36.0	39.9
68.5°	10.2	23.9	26.2	28.6	32.5	28.6	26.2	23.9	10.2	23.9	26.2
69°	6.3	14.5	17.6	18.8	23.5	18.8	17.6	14.5	6.3	14.5	17.6
69.5°	4.3	8.6	11.7	11.0	14.9	11.0	11.7	8.6	4.3	8.6	11.7
70°	3.5	5.1	6.3	5.9	6.7	5.9	6.3	5.1	3.5	5.1	6.3
70.5°	2.3	3.1	3.9	3.9	3.1	3.9	3.9	3.1	2.3	3.1	3.9
71°	2.0	2.3	3.1	3.1	2.7	3.1	3.1	2.3	2.0	2.3	3.1
71.5°	2.0	2.0	2.3	2.3	2.3	2.3	2.3	2.0	2.0	2.0	2.3
72°	2.0	2.0	2.0	2.3	2.3	2.3	2.0	2.0	2.0	2.0	2.0
72.5°	1.6	2.0	2.0	2.0	2.3	2.0	2.0	2.0	1.6	2.0	2.0
73°	1.6	1.6	2.0	2.0	2.0	2.0	2.0	1.6	1.6	1.6	2.0
73.5°	1.6	1.6	1.6	2.0	2.0	2.0	1.6	1.6	1.6	1.6	1.6
74°	1.2	1.6	1.6	1.6	2.0	1.6	1.6	1.6	1.2	1.6	1.6
74.5°	1.2	1.2	1.6	1.6	1.6	1.6	1.6	1.2	1.2	1.2	1.6
75°	1.2	1.2	1.2	1.6	1.6	1.6	1.2	1.2	1.2	1.2	1.2
75.5°	1.2	1.2	1.2	1.6	1.6	1.6	1.2	1.2	1.2	1.2	1.2
76°	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2
76.5°	0.8	0.8	1.2	1.2	1.2	1.2	1.2	0.8	0.8	0.8	1.2
77°	0.8	0.8	1.2	1.2	1.2	1.2	1.2	0.8	0.8	0.8	1.2
77.5°	0.8	0.8	0.8	1.2	1.2	1.2	0.8	0.8	0.8	0.8	0.8
78°	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8
78.5°	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8
79°	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8
79.5°	0.4	0.4	0.8	0.8	0.8	0.8	0.8	0.4	0.4	0.4	0.8
80°	0.4	0.4	0.4	0.8	0.8	0.8	0.4	0.4	0.4	0.4	0.4
80.5°	0.4	0.4	0.4	0.8	0.8	0.8	0.4	0.4	0.4	0.4	0.4
81°	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
81.5°	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
82°	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
82.5°	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
83°	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
83.5°	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
84°	0.0	0.0	0.4	0.4	0.4	0.4	0.4	0.0	0.0	0.0	0.4
84.5°	0.0	0.0	0.0	0.4	0.4	0.4	0.0	0.0	0.0	0.0	0.0
85°	0.0	0.0	0.0	0.4	0.4	0.4	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: P776436
CATALOG NUMBER: HCDJBL3040CSD-HCD81TRC-4000lm-3000K

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: P776436

CATALOG NUMBER: HCDJBL3040CSD-HCD81TRC-4000lm-3000K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
0°	1938.6	1938.6	1938.6	1938.6	1938.6	1938.6
0.5°	1939.4	1938.2	1939.4	1939.0	1938.2	1938.2
1°	1939.0	1938.2	1939.0	1938.6	1938.2	1937.8
1.5°	1938.6	1937.8	1938.6	1938.2	1937.8	1937.4
2°	1938.2	1937.4	1938.2	1937.8	1937.0	1937.0
2.5°	1937.4	1936.6	1937.4	1937.0	1936.6	1936.3
3°	1937.0	1935.9	1937.0	1936.6	1935.9	1935.9
3.5°	1935.9	1935.1	1935.9	1935.9	1935.1	1935.1
4°	1935.1	1933.9	1935.1	1934.7	1934.3	1933.9
4.5°	1933.9	1933.1	1933.9	1933.5	1933.1	1932.7
5°	1932.7	1931.9	1932.7	1932.3	1931.9	1931.6
5.5°	1931.6	1930.8	1931.6	1931.2	1930.8	1930.4
6°	1930.0	1929.2	1930.0	1929.6	1929.2	1928.8
6.5°	1928.4	1927.3	1928.4	1928.0	1927.6	1927.3
7°	1926.5	1925.3	1926.5	1926.1	1925.7	1925.7
7.5°	1924.1	1923.3	1924.1	1924.1	1923.7	1923.7
8°	1922.2	1921.4	1922.2	1921.8	1921.8	1921.4
8.5°	1919.8	1919.0	1919.8	1919.8	1919.4	1919.0
9°	1917.5	1916.7	1917.5	1917.5	1917.1	1917.1
9.5°	1915.1	1914.3	1915.1	1914.7	1914.7	1914.3
10°	1912.4	1911.6	1912.4	1912.4	1912.0	1912.0
10.5°	1909.6	1908.9	1909.6	1909.6	1909.2	1909.2
11°	1906.9	1905.7	1906.9	1906.9	1906.5	1906.5
11.5°	1903.8	1903.0	1903.8	1903.8	1903.4	1903.4
12°	1900.6	1899.8	1900.6	1900.6	1900.6	1900.6
12.5°	1897.5	1896.7	1897.5	1897.5	1897.5	1897.5
13°	1894.4	1893.6	1894.4	1894.8	1894.4	1894.8
13.5°	1891.2	1890.1	1891.2	1891.2	1891.2	1891.6
14°	1888.1	1886.9	1888.1	1888.1	1888.5	1888.5
14.5°	1885.0	1883.8	1885.0	1885.0	1885.4	1885.4
15°	1881.8	1880.7	1881.8	1881.8	1882.2	1882.6
15.5°	1878.7	1877.9	1878.7	1879.1	1879.5	1879.9
16°	1876.4	1875.6	1876.4	1877.1	1877.5	1877.9
16.5°	1874.4	1874.0	1874.4	1875.6	1876.0	1876.4
17°	1873.6	1872.8	1873.6	1874.8	1875.2	1875.2
17.5°	1873.2	1872.8	1873.2	1874.0	1874.8	1874.8
18°	1873.6	1872.8	1873.6	1874.0	1874.8	1874.8
18.5°	1873.6	1872.8	1873.6	1874.4	1874.8	1874.8
19°	1874.4	1873.6	1874.4	1874.8	1875.2	1875.2
19.5°	1874.8	1874.0	1874.8	1875.2	1875.6	1875.6
20°	1875.2	1874.8	1875.2	1875.6	1876.0	1876.0
20.5°	1876.0	1875.2	1876.0	1876.0	1876.0	1876.4
21°	1876.4	1876.0	1876.4	1876.4	1876.4	1876.4

TEST NUMBER: P776436

CATALOG NUMBER: HCDJBL3040CSD-HCD81TRC-4000lm-3000K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
22.5°	1877.1	1877.1	1877.1	1876.7	1876.7	1877.1
23°	1877.5	1877.1	1877.5	1876.7	1876.7	1877.1
23.5°	1877.1	1877.1	1877.1	1876.4	1876.7	1877.1
24°	1877.1	1877.1	1877.1	1876.0	1876.4	1876.7
24.5°	1877.1	1877.1	1877.1	1876.0	1876.0	1876.7
25°	1876.7	1876.7	1876.7	1875.6	1875.6	1876.4
25.5°	1876.7	1876.7	1876.7	1875.2	1875.2	1876.0
26°	1876.4	1876.4	1876.4	1874.4	1874.8	1875.2
26.5°	1876.0	1876.0	1876.0	1874.0	1874.4	1874.8
27°	1875.6	1876.0	1875.6	1873.6	1874.0	1874.8
27.5°	1875.6	1876.0	1875.6	1873.6	1874.4	1874.8
28°	1876.0	1876.4	1876.0	1874.0	1874.4	1875.2
28.5°	1876.4	1876.7	1876.4	1874.0	1874.8	1875.6
29°	1876.7	1876.7	1876.7	1874.0	1874.8	1875.6
29.5°	1876.4	1876.4	1876.4	1874.0	1874.4	1875.2
30°	1875.6	1875.6	1875.6	1873.2	1873.6	1874.0
30.5°	1874.4	1874.0	1874.4	1872.1	1872.1	1872.4
31°	1872.1	1871.7	1872.1	1869.7	1869.7	1870.1
31.5°	1869.3	1868.5	1869.3	1867.4	1867.0	1867.0
32°	1865.4	1864.6	1865.4	1863.4	1863.0	1862.7
32.5°	1860.7	1859.9	1860.7	1859.1	1858.4	1858.0
33°	1855.2	1854.0	1855.2	1854.0	1852.9	1852.5
33.5°	1849.0	1847.8	1849.0	1848.2	1846.6	1846.2
34°	1841.9	1840.3	1841.9	1841.5	1840.0	1838.8
34.5°	1834.1	1832.5	1834.1	1834.1	1832.1	1830.9
35°	1825.5	1823.5	1825.5	1825.9	1823.5	1822.3
35.5°	1816.5	1814.5	1816.5	1816.9	1814.9	1813.3
36°	1806.7	1804.3	1806.7	1807.5	1805.1	1803.5
36.5°	1796.1	1793.8	1796.1	1797.3	1794.9	1793.0
37°	1784.8	1782.0	1784.8	1785.9	1783.6	1781.6
37.5°	1772.2	1769.5	1772.2	1773.4	1771.8	1769.5
38°	1758.9	1756.2	1758.9	1760.5	1758.5	1756.2
38.5°	1744.4	1741.3	1744.4	1746.4	1744.4	1741.7
39°	1728.8	1725.6	1728.8	1730.7	1729.6	1726.4
39.5°	1711.5	1708.4	1711.5	1713.9	1713.1	1710.4
40°	1693.5	1690.8	1693.5	1695.9	1695.1	1692.8
40.5°	1674.4	1671.2	1674.4	1676.7	1676.3	1674.4
41°	1653.6	1651.3	1653.6	1656.0	1656.3	1654.8
41.5°	1632.1	1630.1	1632.1	1634.4	1635.2	1634.0
42°	1609.4	1608.2	1609.4	1611.3	1612.9	1612.5
42.5°	1585.9	1584.7	1585.9	1587.4	1589.8	1590.2
43°	1561.2	1560.4	1561.2	1562.4	1565.1	1566.3
43.5°	1535.4	1535.0	1535.4	1535.8	1539.7	1541.3



TEST NUMBER: P776436

CATALOG NUMBER: HCDJBL3040CSD-HCD81TRC-4000lm-3000K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
45°	1450.8	1452.0	1450.8	1450.8	1456.3	1459.8
45.5°	1420.7	1421.9	1420.7	1419.9	1426.2	1430.1
46°	1389.4	1391.3	1389.4	1388.6	1394.8	1398.8
46.5°	1356.9	1358.8	1356.9	1356.1	1362.3	1365.9
47°	1322.8	1324.4	1322.8	1322.0	1327.9	1331.4
47.5°	1284.8	1286.4	1284.8	1283.7	1289.5	1293.1
48°	1246.1	1247.6	1246.1	1244.1	1248.8	1251.9
48.5°	1209.3	1211.2	1209.3	1207.7	1212.0	1213.6
49°	1175.6	1176.8	1175.6	1174.4	1176.8	1177.6
49.5°	1141.2	1141.9	1141.2	1140.4	1141.6	1141.9
50°	1106.7	1107.9	1106.7	1105.5	1105.5	1105.9
50.5°	1073.0	1073.8	1073.0	1072.3	1072.7	1072.3
51°	1042.1	1041.3	1042.1	1041.3	1041.7	1041.7
51.5°	1012.8	1013.1	1012.8	1012.0	1012.4	1012.8
52°	986.1	987.3	986.1	985.0	985.0	985.0
52.5°	961.1	962.3	961.1	959.5	959.9	959.5
53°	938.4	939.2	938.4	936.4	936.4	936.8
53.5°	916.8	917.6	916.8	915.3	915.3	915.3
54°	895.7	895.7	895.7	894.1	894.1	894.5
54.5°	873.4	873.8	873.4	872.2	872.2	872.2
55°	849.5	849.5	849.5	847.6	847.6	847.6
55.5°	822.1	821.3	822.1	819.4	819.0	819.0
56°	790.8	790.4	790.8	788.4	787.3	786.5
56.5°	757.1	757.1	757.1	754.8	753.2	752.8
57°	721.9	721.1	721.9	719.5	717.6	717.2
57.5°	685.5	685.5	685.5	682.3	680.8	680.0
58°	648.7	649.5	648.7	645.2	642.8	642.8
58.5°	611.1	612.7	611.1	606.8	604.8	603.7
59°	572.7	574.7	572.7	568.4	566.1	564.5
59.5°	535.2	537.5	535.2	529.7	526.9	525.0
60°	497.2	499.5	497.2	492.1	488.6	486.2
60.5°	460.4	462.7	460.4	454.9	450.2	447.5
61°	423.6	425.5	423.6	418.5	413.0	409.5
61.5°	388.0	389.5	388.0	383.3	376.6	373.5
62°	352.3	354.3	352.3	348.0	341.4	337.5
62.5°	317.9	321.0	317.9	314.0	306.5	302.2
63°	284.6	287.7	284.6	280.7	272.5	267.4
63.5°	252.5	255.6	252.5	248.2	239.2	234.9
64°	221.6	223.9	221.6	216.9	208.7	204.0
64.5°	191.4	193.4	191.4	187.1	179.3	174.2
65°	164.8	167.2	164.8	160.1	151.5	146.0
65.5°	139.0	142.1	139.0	133.9	126.8	121.0
66°	114.7	117.8	114.7	109.6	104.5	96.7



TEST NUMBER: P776436

CATALOG NUMBER: HCDJBL3040CSD-HCD81TRC-4000lm-3000K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
67.5°	56.4	57.2	56.4	54.4	50.1	38.8
68°	42.3	44.2	42.3	39.9	36.0	23.5
68.5°	28.6	32.5	28.6	26.2	23.9	10.2
69°	18.8	23.5	18.8	17.6	14.5	6.3
69.5°	11.0	14.9	11.0	11.7	8.6	4.3
70°	5.9	6.7	5.9	6.3	5.1	3.5
70.5°	3.9	3.1	3.9	3.9	3.1	2.3
71°	3.1	2.7	3.1	3.1	2.3	2.0
71.5°	2.3	2.3	2.3	2.3	2.0	2.0
72°	2.3	2.3	2.3	2.0	2.0	2.0
72.5°	2.0	2.3	2.0	2.0	2.0	1.6
73°	2.0	2.0	2.0	2.0	1.6	1.6
73.5°	2.0	2.0	2.0	1.6	1.6	1.6
74°	1.6	2.0	1.6	1.6	1.6	1.2
74.5°	1.6	1.6	1.6	1.6	1.2	1.2
75°	1.6	1.6	1.6	1.2	1.2	1.2
75.5°	1.6	1.6	1.6	1.2	1.2	1.2
76°	1.2	1.2	1.2	1.2	1.2	1.2
76.5°	1.2	1.2	1.2	1.2	0.8	0.8
77°	1.2	1.2	1.2	1.2	0.8	0.8
77.5°	1.2	1.2	1.2	0.8	0.8	0.8
78°	0.8	0.8	0.8	0.8	0.8	0.8
78.5°	0.8	0.8	0.8	0.8	0.8	0.8
79°	0.8	0.8	0.8	0.8	0.8	0.8
79.5°	0.8	0.8	0.8	0.8	0.4	0.4
80°	0.8	0.8	0.8	0.4	0.4	0.4
80.5°	0.8	0.8	0.8	0.4	0.4	0.4
81°	0.4	0.4	0.4	0.4	0.4	0.4
81.5°	0.4	0.4	0.4	0.4	0.4	0.4
82°	0.4	0.4	0.4	0.4	0.4	0.4
82.5°	0.4	0.4	0.4	0.4	0.4	0.4
83°	0.4	0.4	0.4	0.4	0.4	0.4
83.5°	0.4	0.4	0.4	0.4	0.4	0.4
84°	0.4	0.4	0.4	0.4	0.0	0.0
84.5°	0.4	0.4	0.4	0.0	0.0	0.0
85°	0.4	0.4	0.4	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: P776436

CATALOG NUMBER: HCDJBL3040CSD-HCD81TRC-4000lm-3000K

CANDELA DISTRIBUTION (continued):

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



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Cooper Lighting Solutions Photometric Lab
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Peachtree City, GA 30269

Scaled Data Report





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

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Scaled Data Report



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Scaled Data Report





21.5°	1876.7	1876.7	1876.4	1876.7	1876.4	1876.7	1876.4	1876.7	1876.7	1876.7	1876.4
22°	1877.1	1876.7	1876.7	1876.7	1876.7	1876.7	1876.7	1876.7	1877.1	1876.7	1876.7



44°	1515.0	1513.1	1508.4	1508.0	1508.4	1508.0	1508.4	1513.1	1515.0	1513.1	1508.4
44.5°	1488.0	1485.7	1480.2	1480.2	1480.6	1480.2	1480.2	1485.7	1488.0	1485.7	1480.2



66.5°	77.5	83.8	89.3	93.2	94.3	93.2	89.3	83.8	77.5	83.8	89.3
67°	57.9	65.4	69.7	73.6	74.4	73.6	69.7	65.4	57.9	65.4	69.7



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

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21.5°	1876.7	1876.4	1876.7	1876.4	1876.7	1876.7
22°	1876.7	1876.7	1876.7	1876.7	1876.7	1877.1



44°	1508.0	1508.4	1508.0	1508.4	1513.1	1515.0
44.5°	1480.2	1480.6	1480.2	1480.2	1485.7	1488.0



66.5°	93.2	94.3	93.2	89.3	83.8	77.5
67°	73.6	74.4	73.6	69.7	65.4	57.9

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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

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Scaled Data Report



(END OF REPORT)