

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: P776437

Luminaire Tested: HCDJBL3040CSD-HCD81TRC-4000lm-3500K

Issue Date: 2/13/2024

Test Information

Test Method: LM-79-2019
Report Number: P776437
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-3500K
Description: 8 INCH ROUND SHALLOW-WIDE SPECULAR CLEAR TRIM
Light Source: SELECTABLE LUMENS AND CCT ARRAY 90CRI / 3500K CCT
Ballast/Driver: -

Summary

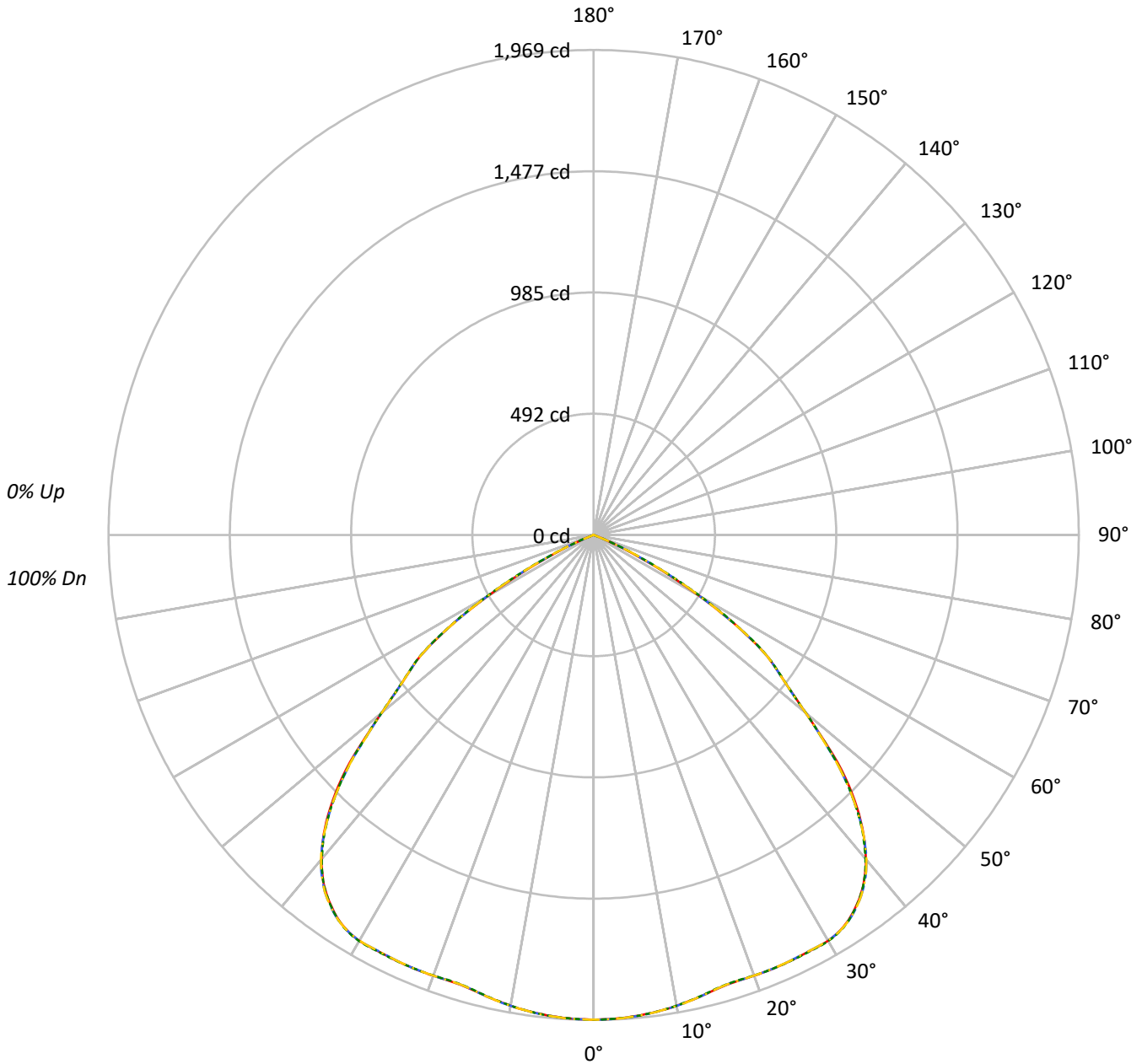
Lumens per Lamp: N/A
Luminaire Lumens: 4817.4 lumens
Efficiency: N/A
Efficacy: 125.1 lumens/watt
Spacing Criteria (0/90/45): 1.44 / 1.44 / 1.44
Luminous Opening: Circular (Dia: 0.67' x H: 0')
CIE Type: Direct

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					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	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°	60090	60090	60090	60090
5°	60099	60111	60099	60111
10°	60177	60164	60177	60164
15°	60411	60348	60411	60348
20°	61880	61841	61880	61841
25°	64173	64186	64173	64186
30°	67073	67129	67073	67129
35°	68954	68999	68954	68999
40°	68494	68414	68494	68414
45°	63992	63646	63992	63646
50°	53329	53424	53329	53424
55°	45803	45909	45803	45909
60°	30139	30964	30139	30964
65°	10706	12259	10706	12259
70°	321	607	321	607
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: 63992 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	186.6	3.9
10°-20°	542.3	11.3
20°-30°	881.5	18.3
30°-40°	1153.1	23.9
40°-50°	1120.3	23.3
50°-60°	744.3	15.4
60°-70°	187.4	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°	1610.4	33.4
0°-40°	2763.5	57.4
0°-60°	4628.0	96.1
0°-90°	4817.4	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4817.4	100.0

CANDELA DISTRIBUTION:

	0°	90°	180°	270°	360°	Flux
0°	1968	1968	1968	1968	1968	
5°	1961	1961	1961	1961	1961	187
15°	1911	1909	1911	1909	1911	542
25°	1905	1905	1905	1905	1905	882
35°	1850	1851	1850	1851	1850	1152
45°	1482	1474	1482	1474	1482	1123
55°	860	862	860	862	860	743
65°	148	170	148	170	148	177
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°	1968.2	1968.2	1968.2	1968.2	1968.2	1968.2	1968.2	1968.2	1968.2	1968.2	1968.2
0.5°	1967.8	1967.8	1968.6	1969.0	1967.8	1969.0	1968.6	1967.8	1967.8	1967.8	1968.6
1°	1967.4	1967.8	1968.2	1968.6	1967.8	1968.6	1968.2	1967.8	1967.4	1967.8	1968.2
1.5°	1967.0	1967.4	1967.8	1968.2	1967.4	1968.2	1967.8	1967.4	1967.0	1967.4	1967.8
2°	1966.6	1966.6	1967.4	1967.8	1967.0	1967.8	1967.4	1966.6	1966.6	1966.6	1967.4
2.5°	1965.8	1966.2	1966.6	1967.0	1966.2	1967.0	1966.6	1966.2	1965.8	1966.2	1966.6
3°	1965.4	1965.4	1966.2	1966.6	1965.4	1966.6	1966.2	1965.4	1965.4	1965.4	1966.2
3.5°	1964.6	1964.6	1965.4	1965.8	1964.6	1965.4	1965.4	1964.6	1964.6	1964.6	1965.4
4°	1963.4	1963.8	1964.2	1964.6	1963.4	1964.6	1964.2	1963.8	1963.4	1963.8	1964.2
4.5°	1962.2	1962.6	1963.0	1963.4	1962.6	1963.4	1963.0	1962.6	1962.2	1962.6	1963.0
5°	1961.0	1961.4	1961.8	1962.2	1961.4	1962.2	1961.8	1961.4	1961.0	1961.4	1961.8
5.5°	1959.8	1960.2	1960.6	1961.0	1960.2	1961.0	1960.6	1960.2	1959.8	1960.2	1960.6
6°	1958.2	1958.6	1959.0	1959.4	1958.6	1959.4	1959.0	1958.6	1958.2	1958.6	1959.0
6.5°	1956.6	1957.0	1957.4	1957.8	1956.6	1957.8	1957.4	1957.0	1956.6	1957.0	1957.4
7°	1955.0	1955.0	1955.4	1955.8	1954.6	1955.8	1955.4	1955.0	1955.0	1955.0	1955.4
7.5°	1953.1	1953.1	1953.4	1953.8	1952.7	1953.4	1953.4	1953.1	1953.1	1953.1	1953.4
8°	1950.7	1951.1	1951.1	1951.5	1950.7	1951.5	1951.1	1951.1	1950.7	1951.1	1951.1
8.5°	1948.3	1948.7	1949.1	1949.1	1948.3	1949.1	1949.1	1948.7	1948.3	1948.7	1949.1
9°	1946.3	1946.3	1946.7	1946.7	1945.9	1946.7	1946.7	1946.3	1946.3	1946.3	1946.7
9.5°	1943.5	1943.9	1943.9	1944.3	1943.5	1944.3	1943.9	1943.9	1943.5	1943.9	1943.9
10°	1941.1	1941.1	1941.5	1941.5	1940.7	1941.5	1941.5	1941.1	1941.1	1941.1	1941.5
10.5°	1938.3	1938.3	1938.7	1938.7	1937.9	1938.7	1938.7	1938.3	1938.3	1938.3	1938.7
11°	1935.6	1935.6	1936.0	1936.0	1934.8	1936.0	1936.0	1935.6	1935.6	1935.6	1936.0
11.5°	1932.4	1932.4	1932.8	1932.8	1932.0	1932.8	1932.8	1932.4	1932.4	1932.4	1932.8
12°	1929.6	1929.6	1929.6	1929.6	1928.8	1929.6	1929.6	1929.6	1929.6	1929.6	1929.6
12.5°	1926.4	1926.4	1926.4	1926.4	1925.6	1926.4	1926.4	1926.4	1926.4	1926.4	1926.4
13°	1923.6	1923.2	1923.6	1923.2	1922.4	1923.2	1923.6	1923.2	1923.6	1923.2	1923.6
13.5°	1920.5	1920.1	1920.1	1920.1	1918.9	1920.1	1920.1	1920.1	1920.5	1920.1	1920.1
14°	1917.3	1917.3	1916.9	1916.9	1915.7	1916.9	1916.9	1917.3	1917.3	1917.3	1916.9
14.5°	1914.1	1914.1	1913.7	1913.7	1912.5	1913.7	1913.7	1914.1	1914.1	1914.1	1913.7
15°	1911.3	1910.9	1910.5	1910.5	1909.3	1910.5	1910.5	1910.9	1911.3	1910.9	1910.5
15.5°	1908.5	1908.1	1907.7	1907.3	1906.6	1907.3	1907.7	1908.1	1908.5	1908.1	1907.7
16°	1906.6	1906.2	1905.8	1905.0	1904.2	1905.0	1905.8	1906.2	1906.6	1906.2	1905.8
16.5°	1905.0	1904.6	1904.2	1903.0	1902.6	1903.0	1904.2	1904.6	1905.0	1904.6	1904.2
17°	1903.8	1903.8	1903.4	1902.2	1901.4	1902.2	1903.4	1903.8	1903.8	1903.8	1903.4
17.5°	1903.4	1903.4	1902.6	1901.8	1901.4	1901.8	1902.6	1903.4	1903.4	1903.4	1902.6
18°	1903.4	1903.4	1902.6	1902.2	1901.4	1902.2	1902.6	1903.4	1903.4	1903.4	1902.6
18.5°	1903.4	1903.4	1903.0	1902.2	1901.4	1902.2	1903.0	1903.4	1903.4	1903.4	1903.0
19°	1903.8	1903.8	1903.4	1903.0	1902.2	1903.0	1903.4	1903.8	1903.8	1903.8	1903.4
19.5°	1904.2	1904.2	1903.8	1903.4	1902.6	1903.4	1903.8	1904.2	1904.2	1904.2	1903.8
20°	1904.6	1904.6	1904.2	1903.8	1903.4	1903.8	1904.2	1904.6	1904.6	1904.6	1904.2
20.5°	1905.0	1904.6	1904.6	1904.6	1903.8	1904.6	1904.6	1904.6	1905.0	1904.6	1904.6
21°	1905.0	1905.0	1905.0	1905.0	1904.6	1905.0	1905.0	1905.0	1905.0	1905.0	1905.0

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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°	1905.8	1905.4	1905.4	1905.8	1905.8	1905.8	1905.4	1905.4	1905.8	1905.4	1905.4
23°	1905.8	1905.4	1905.4	1906.2	1905.8	1906.2	1905.4	1905.4	1905.8	1905.4	1905.4
23.5°	1905.8	1905.4	1905.0	1905.8	1905.8	1905.8	1905.0	1905.4	1905.8	1905.4	1905.0
24°	1905.4	1905.0	1904.6	1905.8	1905.8	1905.8	1904.6	1905.0	1905.4	1905.0	1904.6
24.5°	1905.4	1904.6	1904.6	1905.8	1905.8	1905.8	1904.6	1904.6	1905.4	1904.6	1904.6
25°	1905.0	1904.2	1904.2	1905.4	1905.4	1905.4	1904.2	1904.2	1905.0	1904.2	1904.2
25.5°	1904.6	1903.8	1903.8	1905.4	1905.4	1905.4	1903.8	1903.8	1904.6	1903.8	1903.8
26°	1903.8	1903.4	1903.0	1905.0	1905.0	1905.0	1903.0	1903.4	1903.8	1903.4	1903.0
26.5°	1903.4	1903.0	1902.6	1904.6	1904.6	1904.6	1902.6	1903.0	1903.4	1903.0	1902.6
27°	1903.4	1902.6	1902.2	1904.2	1904.6	1904.2	1902.2	1902.6	1903.4	1902.6	1902.2
27.5°	1903.4	1903.0	1902.2	1904.2	1904.6	1904.2	1902.2	1903.0	1903.4	1903.0	1902.2
28°	1903.8	1903.0	1902.6	1904.6	1905.0	1904.6	1902.6	1903.0	1903.8	1903.0	1902.6
28.5°	1904.2	1903.4	1902.6	1905.0	1905.4	1905.0	1902.6	1903.4	1904.2	1903.4	1902.6
29°	1904.2	1903.4	1902.6	1905.4	1905.4	1905.4	1902.6	1903.4	1904.2	1903.4	1902.6
29.5°	1903.8	1903.0	1902.6	1905.0	1905.0	1905.0	1902.6	1903.0	1903.8	1903.0	1902.6
30°	1902.6	1902.2	1901.8	1904.2	1904.2	1904.2	1901.8	1902.2	1902.6	1902.2	1901.8
30.5°	1901.0	1900.6	1900.6	1903.0	1902.6	1903.0	1900.6	1900.6	1901.0	1900.6	1900.6
31°	1898.6	1898.2	1898.2	1900.6	1900.2	1900.6	1898.2	1898.2	1898.6	1898.2	1898.2
31.5°	1895.4	1895.4	1895.8	1897.8	1897.0	1897.8	1895.8	1895.4	1895.4	1895.4	1895.8
32°	1891.1	1891.4	1891.8	1893.8	1893.0	1893.8	1891.8	1891.4	1891.1	1891.4	1891.8
32.5°	1886.3	1886.7	1887.5	1889.1	1888.3	1889.1	1887.5	1886.7	1886.3	1886.7	1887.5
33°	1880.7	1881.1	1882.3	1883.5	1882.3	1883.5	1882.3	1881.1	1880.7	1881.1	1882.3
33.5°	1874.4	1874.8	1876.3	1877.1	1875.9	1877.1	1876.3	1874.8	1874.4	1874.8	1876.3
34°	1866.8	1868.0	1869.6	1870.0	1868.4	1870.0	1869.6	1868.0	1866.8	1868.0	1869.6
34.5°	1858.9	1860.0	1862.0	1862.0	1860.4	1862.0	1862.0	1860.0	1858.9	1860.0	1862.0
35°	1850.1	1851.3	1853.7	1853.3	1851.3	1853.3	1853.7	1851.3	1850.1	1851.3	1853.7
35.5°	1841.0	1842.6	1844.5	1844.2	1842.2	1844.2	1844.5	1842.6	1841.0	1842.6	1844.5
36°	1831.0	1832.6	1835.0	1834.2	1831.8	1834.2	1835.0	1832.6	1831.0	1832.6	1835.0
36.5°	1820.3	1822.3	1824.7	1823.5	1821.1	1823.5	1824.7	1822.3	1820.3	1822.3	1824.7
37°	1808.8	1810.8	1813.2	1812.0	1809.2	1812.0	1813.2	1810.8	1808.8	1810.8	1813.2
37.5°	1796.5	1798.8	1800.4	1799.2	1796.5	1799.2	1800.4	1798.8	1796.5	1798.8	1800.4
38°	1782.9	1785.3	1787.3	1785.7	1782.9	1785.7	1787.3	1785.3	1782.9	1785.3	1787.3
38.5°	1768.2	1771.0	1773.0	1771.0	1767.8	1771.0	1773.0	1771.0	1768.2	1771.0	1773.0
39°	1752.7	1755.9	1757.1	1755.1	1751.9	1755.1	1757.1	1755.9	1752.7	1755.9	1757.1
39.5°	1736.4	1739.2	1740.0	1737.6	1734.5	1737.6	1740.0	1739.2	1736.4	1739.2	1740.0
40°	1718.6	1720.9	1721.7	1719.4	1716.6	1719.4	1721.7	1720.9	1718.6	1720.9	1721.7
40.5°	1699.9	1701.9	1702.3	1699.9	1696.7	1699.9	1702.3	1701.9	1699.9	1701.9	1702.3
41°	1680.0	1681.6	1681.2	1678.8	1676.4	1678.8	1681.2	1681.6	1680.0	1681.6	1681.2
41.5°	1658.9	1660.1	1659.3	1657.0	1655.0	1657.0	1659.3	1660.1	1658.9	1660.1	1659.3
42°	1637.1	1637.5	1635.9	1633.9	1632.7	1633.9	1635.9	1637.5	1637.1	1637.5	1635.9
42.5°	1614.4	1614.0	1611.6	1610.1	1608.9	1610.1	1611.6	1614.0	1614.4	1614.0	1611.6
43°	1590.2	1589.0	1586.2	1585.0	1584.2	1585.0	1586.2	1589.0	1590.2	1589.0	1586.2
43.5°	1564.7	1563.2	1559.2	1558.8	1558.4	1558.8	1559.2	1563.2	1564.7	1563.2	1559.2



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
45°	1482.1	1478.5	1472.9	1472.9	1474.1	1472.9	1472.9	1478.5	1482.1	1478.5	1472.9
45.5°	1451.9	1447.9	1441.5	1442.3	1443.5	1442.3	1441.5	1447.9	1451.9	1447.9	1441.5
46°	1420.1	1416.1	1409.7	1410.5	1412.5	1410.5	1409.7	1416.1	1420.1	1416.1	1409.7
46.5°	1386.7	1383.1	1376.8	1377.5	1379.5	1377.5	1376.8	1383.1	1386.7	1383.1	1376.8
47°	1351.7	1348.1	1342.2	1343.0	1344.6	1343.0	1342.2	1348.1	1351.7	1348.1	1342.2
47.5°	1312.8	1309.2	1303.2	1304.4	1306.0	1304.4	1303.2	1309.2	1312.8	1309.2	1303.2
48°	1271.0	1267.9	1263.1	1265.1	1266.7	1265.1	1263.1	1267.9	1271.0	1267.9	1263.1
48.5°	1232.1	1230.5	1226.1	1227.7	1229.7	1227.7	1226.1	1230.5	1232.1	1230.5	1226.1
49°	1195.5	1194.7	1192.3	1193.5	1194.7	1193.5	1192.3	1194.7	1195.5	1194.7	1192.3
49.5°	1159.4	1159.0	1157.8	1158.6	1159.4	1158.6	1157.8	1159.0	1159.4	1159.0	1157.8
50°	1122.8	1122.4	1122.4	1123.6	1124.8	1123.6	1122.4	1122.4	1122.8	1122.4	1122.4
50.5°	1088.6	1089.0	1088.6	1089.4	1090.2	1089.4	1088.6	1089.0	1088.6	1089.0	1088.6
51°	1057.6	1057.6	1057.2	1058.0	1057.2	1058.0	1057.2	1057.6	1057.6	1057.6	1057.2
51.5°	1028.2	1027.8	1027.4	1028.2	1028.6	1028.2	1027.4	1027.8	1028.2	1027.8	1027.4
52°	1000.0	1000.0	1000.0	1001.2	1002.4	1001.2	1000.0	1000.0	1000.0	1000.0	1000.0
52.5°	974.1	974.5	974.1	975.7	976.9	975.7	974.1	974.5	974.1	974.5	974.1
53°	951.1	950.7	950.7	952.7	953.5	952.7	950.7	950.7	951.1	950.7	950.7
53.5°	929.2	929.2	929.2	930.8	931.6	930.8	929.2	929.2	929.2	929.2	929.2
54°	908.2	907.8	907.8	909.4	909.4	909.4	907.8	907.8	908.2	907.8	907.8
54.5°	885.5	885.5	885.5	886.7	887.1	886.7	885.5	885.5	885.5	885.5	885.5
55°	860.5	860.5	860.5	862.5	862.5	862.5	860.5	860.5	860.5	860.5	860.5
55.5°	831.5	831.5	831.9	834.6	833.8	834.6	831.9	831.5	831.5	831.5	831.9
56°	798.5	799.3	800.5	802.8	802.4	802.8	800.5	799.3	798.5	799.3	800.5
56.5°	764.3	764.7	766.3	768.7	768.7	768.7	766.3	764.7	764.3	764.7	766.3
57°	728.1	728.5	730.5	732.9	732.1	732.9	730.5	728.5	728.1	728.5	730.5
57.5°	690.4	691.2	692.7	695.9	695.9	695.9	692.7	691.2	690.4	691.2	692.7
58°	652.6	652.6	655.0	658.6	659.4	658.6	655.0	652.6	652.6	652.6	655.0
58.5°	612.9	614.1	616.0	620.4	622.0	620.4	616.0	614.1	612.9	614.1	616.0
59°	573.1	574.7	577.1	581.5	583.5	581.5	577.1	574.7	573.1	574.7	577.1
59.5°	533.0	535.0	537.7	543.3	545.7	543.3	537.7	535.0	533.0	535.0	537.7
60°	493.6	496.0	499.6	504.8	507.1	504.8	499.6	496.0	493.6	496.0	499.6
60.5°	454.3	457.1	461.8	467.4	469.8	467.4	461.8	457.1	454.3	457.1	461.8
61°	415.7	419.3	424.9	430.0	432.0	430.0	424.9	419.3	415.7	419.3	424.9
61.5°	379.2	382.3	389.1	393.9	395.5	393.9	389.1	382.3	379.2	382.3	389.1
62°	342.6	346.6	353.3	357.7	359.7	357.7	353.3	346.6	342.6	346.6	353.3
62.5°	306.8	311.2	318.8	322.7	325.9	322.7	318.8	311.2	306.8	311.2	318.8
63°	271.5	276.6	285.0	288.9	292.1	288.9	285.0	276.6	271.5	276.6	285.0
63.5°	238.5	242.8	252.0	256.4	259.5	256.4	252.0	242.8	238.5	242.8	252.0
64°	207.1	211.8	220.2	225.0	227.3	225.0	220.2	211.8	207.1	211.8	220.2
64.5°	176.9	182.0	190.0	194.4	196.3	194.4	190.0	182.0	176.9	182.0	190.0
65°	148.2	153.8	162.6	167.3	169.7	167.3	162.6	153.8	148.2	153.8	162.6
65.5°	122.8	128.8	135.9	141.1	144.3	141.1	135.9	128.8	122.8	128.8	135.9
66°	98.2	106.1	111.3	116.5	119.6	116.5	111.3	106.1	98.2	106.1	111.3



TEST NUMBER: P776437

CATALOG NUMBER: HCDJBL3040CSD-HCD81TRC-4000lm-3500K

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
67.5°	39.3	50.9	55.2	57.2	58.0	57.2	55.2	50.9	39.3	50.9	55.2
68°	23.8	36.6	40.5	42.9	44.9	42.9	40.5	36.6	23.8	36.6	40.5
68.5°	10.3	24.2	26.6	29.0	33.0	29.0	26.6	24.2	10.3	24.2	26.6
69°	6.4	14.7	17.9	19.1	23.8	19.1	17.9	14.7	6.4	14.7	17.9
69.5°	4.4	8.7	11.9	11.1	15.1	11.1	11.9	8.7	4.4	8.7	11.9
70°	3.6	5.2	6.4	6.0	6.8	6.0	6.4	5.2	3.6	5.2	6.4
70.5°	2.4	3.2	4.0	4.0	3.2	4.0	4.0	3.2	2.4	3.2	4.0
71°	2.0	2.4	3.2	3.2	2.8	3.2	3.2	2.4	2.0	2.4	3.2
71.5°	2.0	2.0	2.4	2.4	2.4	2.4	2.4	2.0	2.0	2.0	2.4
72°	2.0	2.0	2.0	2.4	2.4	2.4	2.0	2.0	2.0	2.0	2.0
72.5°	1.6	2.0	2.0	2.0	2.4	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: P776437
CATALOG NUMBER: HCDJBL3040CSD-HCD81TRC-4000lm-3500K

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: P776437

CATALOG NUMBER: HCDJBL3040CSD-HCD81TRC-4000lm-3500K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
0°	1968.2	1968.2	1968.2	1968.2	1968.2	1968.2
0.5°	1969.0	1967.8	1969.0	1968.6	1967.8	1967.8
1°	1968.6	1967.8	1968.6	1968.2	1967.8	1967.4
1.5°	1968.2	1967.4	1968.2	1967.8	1967.4	1967.0
2°	1967.8	1967.0	1967.8	1967.4	1966.6	1966.6
2.5°	1967.0	1966.2	1967.0	1966.6	1966.2	1965.8
3°	1966.6	1965.4	1966.6	1966.2	1965.4	1965.4
3.5°	1965.4	1964.6	1965.4	1965.4	1964.6	1964.6
4°	1964.6	1963.4	1964.6	1964.2	1963.8	1963.4
4.5°	1963.4	1962.6	1963.4	1963.0	1962.6	1962.2
5°	1962.2	1961.4	1962.2	1961.8	1961.4	1961.0
5.5°	1961.0	1960.2	1961.0	1960.6	1960.2	1959.8
6°	1959.4	1958.6	1959.4	1959.0	1958.6	1958.2
6.5°	1957.8	1956.6	1957.8	1957.4	1957.0	1956.6
7°	1955.8	1954.6	1955.8	1955.4	1955.0	1955.0
7.5°	1953.4	1952.7	1953.4	1953.4	1953.1	1953.1
8°	1951.5	1950.7	1951.5	1951.1	1951.1	1950.7
8.5°	1949.1	1948.3	1949.1	1949.1	1948.7	1948.3
9°	1946.7	1945.9	1946.7	1946.7	1946.3	1946.3
9.5°	1944.3	1943.5	1944.3	1943.9	1943.9	1943.5
10°	1941.5	1940.7	1941.5	1941.5	1941.1	1941.1
10.5°	1938.7	1937.9	1938.7	1938.7	1938.3	1938.3
11°	1936.0	1934.8	1936.0	1936.0	1935.6	1935.6
11.5°	1932.8	1932.0	1932.8	1932.8	1932.4	1932.4
12°	1929.6	1928.8	1929.6	1929.6	1929.6	1929.6
12.5°	1926.4	1925.6	1926.4	1926.4	1926.4	1926.4
13°	1923.2	1922.4	1923.2	1923.6	1923.2	1923.6
13.5°	1920.1	1918.9	1920.1	1920.1	1920.1	1920.5
14°	1916.9	1915.7	1916.9	1916.9	1917.3	1917.3
14.5°	1913.7	1912.5	1913.7	1913.7	1914.1	1914.1
15°	1910.5	1909.3	1910.5	1910.5	1910.9	1911.3
15.5°	1907.3	1906.6	1907.3	1907.7	1908.1	1908.5
16°	1905.0	1904.2	1905.0	1905.8	1906.2	1906.6
16.5°	1903.0	1902.6	1903.0	1904.2	1904.6	1905.0
17°	1902.2	1901.4	1902.2	1903.4	1903.8	1903.8
17.5°	1901.8	1901.4	1901.8	1902.6	1903.4	1903.4
18°	1902.2	1901.4	1902.2	1902.6	1903.4	1903.4
18.5°	1902.2	1901.4	1902.2	1903.0	1903.4	1903.4
19°	1903.0	1902.2	1903.0	1903.4	1903.8	1903.8
19.5°	1903.4	1902.6	1903.4	1903.8	1904.2	1904.2
20°	1903.8	1903.4	1903.8	1904.2	1904.6	1904.6
20.5°	1904.6	1903.8	1904.6	1904.6	1904.6	1905.0
21°	1905.0	1904.6	1905.0	1905.0	1905.0	1905.0



TEST NUMBER: P776437

CATALOG NUMBER: HCDJBL3040CSD-HCD81TRC-4000lm-3500K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
22.5°	1905.8	1905.8	1905.8	1905.4	1905.4	1905.8
23°	1906.2	1905.8	1906.2	1905.4	1905.4	1905.8
23.5°	1905.8	1905.8	1905.8	1905.0	1905.4	1905.8
24°	1905.8	1905.8	1905.8	1904.6	1905.0	1905.4
24.5°	1905.8	1905.8	1905.8	1904.6	1904.6	1905.4
25°	1905.4	1905.4	1905.4	1904.2	1904.2	1905.0
25.5°	1905.4	1905.4	1905.4	1903.8	1903.8	1904.6
26°	1905.0	1905.0	1905.0	1903.0	1903.4	1903.8
26.5°	1904.6	1904.6	1904.6	1902.6	1903.0	1903.4
27°	1904.2	1904.6	1904.2	1902.2	1902.6	1903.4
27.5°	1904.2	1904.6	1904.2	1902.2	1903.0	1903.4
28°	1904.6	1905.0	1904.6	1902.6	1903.0	1903.8
28.5°	1905.0	1905.4	1905.0	1902.6	1903.4	1904.2
29°	1905.4	1905.4	1905.4	1902.6	1903.4	1904.2
29.5°	1905.0	1905.0	1905.0	1902.6	1903.0	1903.8
30°	1904.2	1904.2	1904.2	1901.8	1902.2	1902.6
30.5°	1903.0	1902.6	1903.0	1900.6	1900.6	1901.0
31°	1900.6	1900.2	1900.6	1898.2	1898.2	1898.6
31.5°	1897.8	1897.0	1897.8	1895.8	1895.4	1895.4
32°	1893.8	1893.0	1893.8	1891.8	1891.4	1891.1
32.5°	1889.1	1888.3	1889.1	1887.5	1886.7	1886.3
33°	1883.5	1882.3	1883.5	1882.3	1881.1	1880.7
33.5°	1877.1	1875.9	1877.1	1876.3	1874.8	1874.4
34°	1870.0	1868.4	1870.0	1869.6	1868.0	1866.8
34.5°	1862.0	1860.4	1862.0	1862.0	1860.0	1858.9
35°	1853.3	1851.3	1853.3	1853.7	1851.3	1850.1
35.5°	1844.2	1842.2	1844.2	1844.5	1842.6	1841.0
36°	1834.2	1831.8	1834.2	1835.0	1832.6	1831.0
36.5°	1823.5	1821.1	1823.5	1824.7	1822.3	1820.3
37°	1812.0	1809.2	1812.0	1813.2	1810.8	1808.8
37.5°	1799.2	1796.5	1799.2	1800.4	1798.8	1796.5
38°	1785.7	1782.9	1785.7	1787.3	1785.3	1782.9
38.5°	1771.0	1767.8	1771.0	1773.0	1771.0	1768.2
39°	1755.1	1751.9	1755.1	1757.1	1755.9	1752.7
39.5°	1737.6	1734.5	1737.6	1740.0	1739.2	1736.4
40°	1719.4	1716.6	1719.4	1721.7	1720.9	1718.6
40.5°	1699.9	1696.7	1699.9	1702.3	1701.9	1699.9
41°	1678.8	1676.4	1678.8	1681.2	1681.6	1680.0
41.5°	1657.0	1655.0	1657.0	1659.3	1660.1	1658.9
42°	1633.9	1632.7	1633.9	1635.9	1637.5	1637.1
42.5°	1610.1	1608.9	1610.1	1611.6	1614.0	1614.4
43°	1585.0	1584.2	1585.0	1586.2	1589.0	1590.2
43.5°	1558.8	1558.4	1558.8	1559.2	1563.2	1564.7



TEST NUMBER: P776437

CATALOG NUMBER: HCDJBL3040CSD-HCD81TRC-4000lm-3500K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
45°	1472.9	1474.1	1472.9	1472.9	1478.5	1482.1
45.5°	1442.3	1443.5	1442.3	1441.5	1447.9	1451.9
46°	1410.5	1412.5	1410.5	1409.7	1416.1	1420.1
46.5°	1377.5	1379.5	1377.5	1376.8	1383.1	1386.7
47°	1343.0	1344.6	1343.0	1342.2	1348.1	1351.7
47.5°	1304.4	1306.0	1304.4	1303.2	1309.2	1312.8
48°	1265.1	1266.7	1265.1	1263.1	1267.9	1271.0
48.5°	1227.7	1229.7	1227.7	1226.1	1230.5	1232.1
49°	1193.5	1194.7	1193.5	1192.3	1194.7	1195.5
49.5°	1158.6	1159.4	1158.6	1157.8	1159.0	1159.4
50°	1123.6	1124.8	1123.6	1122.4	1122.4	1122.8
50.5°	1089.4	1090.2	1089.4	1088.6	1089.0	1088.6
51°	1058.0	1057.2	1058.0	1057.2	1057.6	1057.6
51.5°	1028.2	1028.6	1028.2	1027.4	1027.8	1028.2
52°	1001.2	1002.4	1001.2	1000.0	1000.0	1000.0
52.5°	975.7	976.9	975.7	974.1	974.5	974.1
53°	952.7	953.5	952.7	950.7	950.7	951.1
53.5°	930.8	931.6	930.8	929.2	929.2	929.2
54°	909.4	909.4	909.4	907.8	907.8	908.2
54.5°	886.7	887.1	886.7	885.5	885.5	885.5
55°	862.5	862.5	862.5	860.5	860.5	860.5
55.5°	834.6	833.8	834.6	831.9	831.5	831.5
56°	802.8	802.4	802.8	800.5	799.3	798.5
56.5°	768.7	768.7	768.7	766.3	764.7	764.3
57°	732.9	732.1	732.9	730.5	728.5	728.1
57.5°	695.9	695.9	695.9	692.7	691.2	690.4
58°	658.6	659.4	658.6	655.0	652.6	652.6
58.5°	620.4	622.0	620.4	616.0	614.1	612.9
59°	581.5	583.5	581.5	577.1	574.7	573.1
59.5°	543.3	545.7	543.3	537.7	535.0	533.0
60°	504.8	507.1	504.8	499.6	496.0	493.6
60.5°	467.4	469.8	467.4	461.8	457.1	454.3
61°	430.0	432.0	430.0	424.9	419.3	415.7
61.5°	393.9	395.5	393.9	389.1	382.3	379.2
62°	357.7	359.7	357.7	353.3	346.6	342.6
62.5°	322.7	325.9	322.7	318.8	311.2	306.8
63°	288.9	292.1	288.9	285.0	276.6	271.5
63.5°	256.4	259.5	256.4	252.0	242.8	238.5
64°	225.0	227.3	225.0	220.2	211.8	207.1
64.5°	194.4	196.3	194.4	190.0	182.0	176.9
65°	167.3	169.7	167.3	162.6	153.8	148.2
65.5°	141.1	144.3	141.1	135.9	128.8	122.8
66°	116.5	119.6	116.5	111.3	106.1	98.2



TEST NUMBER: P776437

CATALOG NUMBER: HCDJBL3040CSD-HCD81TRC-4000lm-3500K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
67.5°	57.2	58.0	57.2	55.2	50.9	39.3
68°	42.9	44.9	42.9	40.5	36.6	23.8
68.5°	29.0	33.0	29.0	26.6	24.2	10.3
69°	19.1	23.8	19.1	17.9	14.7	6.4
69.5°	11.1	15.1	11.1	11.9	8.7	4.4
70°	6.0	6.8	6.0	6.4	5.2	3.6
70.5°	4.0	3.2	4.0	4.0	3.2	2.4
71°	3.2	2.8	3.2	3.2	2.4	2.0
71.5°	2.4	2.4	2.4	2.4	2.0	2.0
72°	2.4	2.4	2.4	2.0	2.0	2.0
72.5°	2.0	2.4	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: P776437

CATALOG NUMBER: HCDJBL3040CSD-HCD81TRC-4000lm-3500K

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°	1905.4	1905.4	1905.0	1905.4	1905.0	1905.4	1905.0	1905.4	1905.4	1905.4	1905.0
22°	1905.8	1905.4	1905.4	1905.4	1905.4	1905.4	1905.4	1905.4	1905.8	1905.4	1905.4



44°	1538.1	1536.1	1531.4	1531.0	1531.4	1531.0	1531.4	1536.1	1538.1	1536.1	1531.4
44.5°	1510.7	1508.3	1502.7	1502.7	1503.1	1502.7	1502.7	1508.3	1510.7	1508.3	1502.7



66.5°	78.7	85.1	90.6	94.6	95.8	94.6	90.6	85.1	78.7	85.1	90.6
67°	58.8	66.4	70.7	74.7	75.5	74.7	70.7	66.4	58.8	66.4	70.7



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°	1905.4	1905.0	1905.4	1905.0	1905.4	1905.4
22°	1905.4	1905.4	1905.4	1905.4	1905.4	1905.8



44°	1531.0	1531.4	1531.0	1531.4	1536.1	1538.1
44.5°	1502.7	1503.1	1502.7	1502.7	1508.3	1510.7

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66.5°	94.6	95.8	94.6	90.6	85.1	78.7
67°	74.7	75.5	74.7	70.7	66.4	58.8

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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)