

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: P776438

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

Issue Date: 2/13/2024

**Test Information**

Test Method: LM-79-2019  
Report Number: P776438  
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-4000K  
Description: 8 INCH ROUND SHALLOW-WIDE SPECULAR CLEAR TRIM  
Light Source: SELECTABLE LUMENS AND CCT ARRAY 90CRI / 4000K CCT  
Ballast/Driver: -

**Summary**

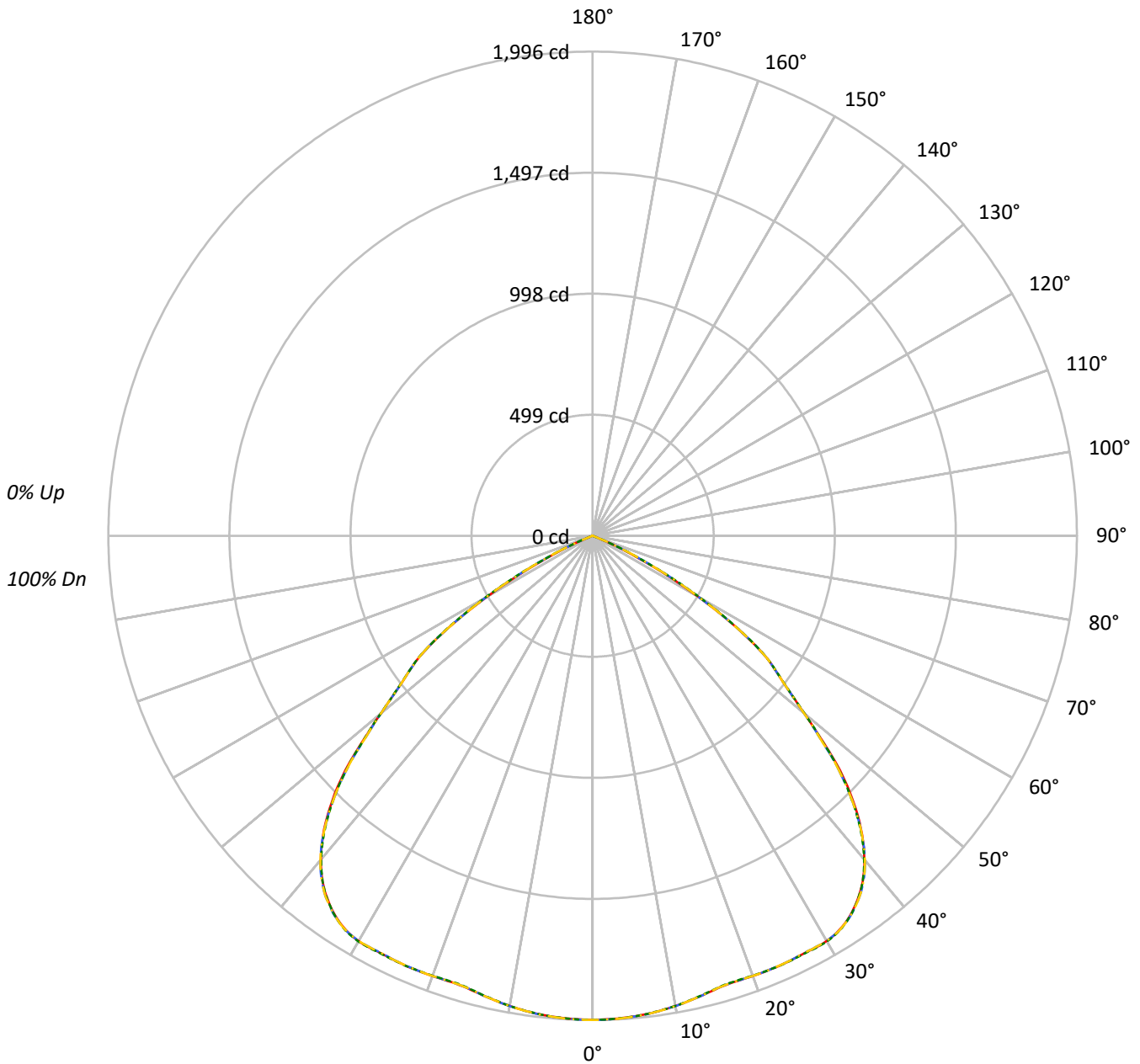
Lumens per Lamp: N/A  
Luminaire Lumens: 4884.8 lumens  
Efficiency: N/A  
Efficacy: 126.9 lumens/watt  
Spacing Criteria (0/90/45): 1.44 / 1.44 / 1.44  
Luminous Opening: Circular (Dia: 0.67' x H: 0')  
CIE Type: Direct

Input Watts (W): 38.5  
Input Voltage (V): NR  
Input Current (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



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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	100	100	100	100	100		
	1	111	108	105	102	109	106	103	100	102	99	97	98	96	94	94	93	91	89	89	89	89	89	89		
	2	103	97	91	87	101	95	90	86	91	87	84	88	85	82	85	83	80	78	78	78	78	78	78		
	3	95	87	80	74	93	85	79	74	82	77	73	80	75	71	77	73	70	68	68	68	68	68	68		
	4	88	78	70	64	86	77	69	64	74	68	63	72	67	62	70	65	62	60	60	60	60	60	60		
	5	81	70	62	56	80	69	62	56	67	60	55	65	59	55	63	58	54	52	52	52	52	52	52		
	6	75	63	55	50	74	63	55	49	61	54	49	59	53	49	58	52	48	46	46	46	46	46	46		
	7	70	58	50	44	68	57	49	44	55	49	44	54	48	43	53	47	43	41	41	41	41	41	41		
	8	65	53	45	39	64	52	45	39	51	44	39	50	43	39	48	43	39	37	37	37	37	37	37		
	9	61	48	41	35	60	48	40	35	47	40	35	46	39	35	45	39	35	33	33	33	33	33	33		
	10	57	45	37	32	56	44	37	32	43	37	32	42	36	32	41	36	32	30	30	30	30	30	30		

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

	0°	90°	180°	270°
0°	60929	60929	60929	60929
5°	60941	60954	60941	60954
10°	61020	61007	61020	61007
15°	61258	61195	61258	61195
20°	62747	62705	62747	62705
25°	65072	65086	65072	65086
30°	68011	68071	68011	68071
35°	69920	69968	69920	69968
40°	69450	69371	69450	69371
45°	64885	64540	64885	64540
50°	54075	54170	54075	54170
55°	46441	46548	46441	46548
60°	30561	31397	30561	31397
65°	10858	12433	10858	12433
70°	321	616	321	616
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: 64885 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	189.2	3.9
10°-20°	549.9	11.3
20°-30°	893.8	18.3
30°-40°	1169.3	23.9
40°-50°	1136.0	23.3
50°-60°	754.7	15.4
60°-70°	190.1	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°	1632.9	33.4
0°-40°	2802.2	57.4
0°-60°	4692.9	96.1
0°-90°	4884.8	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4884.8	100.0

**CANDELA DISTRIBUTION:**

	0°	90°	180°	270°	360°	Flux
0°	1996	1996	1996	1996	1996	
5°	1988	1989	1988	1989	1988	189
15°	1938	1936	1938	1936	1938	550
25°	1932	1932	1932	1932	1932	894
35°	1876	1877	1876	1877	1876	1168
45°	1503	1495	1503	1495	1503	1139
55°	872	874	872	874	872	753
65°	150	172	150	172	150	179
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°	1995.7	1995.7	1995.7	1995.7	1995.7	1995.7	1995.7	1995.7	1995.7	1995.7	1995.7
0.5°	1995.3	1995.3	1996.1	1996.5	1995.3	1996.5	1996.1	1995.3	1995.3	1995.3	1996.1
1°	1994.9	1995.3	1995.7	1996.1	1995.3	1996.1	1995.7	1995.3	1994.9	1995.3	1995.7
1.5°	1994.5	1994.9	1995.3	1995.7	1994.9	1995.7	1995.3	1994.9	1994.5	1994.9	1995.3
2°	1994.1	1994.1	1994.9	1995.3	1994.5	1995.3	1994.9	1994.1	1994.1	1994.1	1994.9
2.5°	1993.3	1993.7	1994.1	1994.5	1993.7	1994.5	1994.1	1993.7	1993.3	1993.7	1994.1
3°	1992.9	1992.9	1993.7	1994.1	1992.9	1994.1	1993.7	1992.9	1992.9	1992.9	1993.7
3.5°	1992.1	1992.1	1992.9	1992.9	1992.1	1992.9	1992.9	1992.1	1992.1	1992.1	1992.9
4°	1990.9	1991.3	1991.7	1992.1	1990.9	1992.1	1991.7	1991.3	1990.9	1991.3	1991.7
4.5°	1989.7	1990.1	1990.5	1990.9	1990.1	1990.9	1990.5	1990.1	1989.7	1990.1	1990.5
5°	1988.5	1988.9	1989.3	1989.7	1988.9	1989.7	1989.3	1988.9	1988.5	1988.9	1989.3
5.5°	1987.3	1987.7	1988.1	1988.5	1987.7	1988.5	1988.1	1987.7	1987.3	1987.7	1988.1
6°	1985.7	1986.1	1986.5	1986.9	1986.1	1986.9	1986.5	1986.1	1985.7	1986.1	1986.5
6.5°	1984.0	1984.5	1984.9	1985.3	1984.0	1985.3	1984.9	1984.5	1984.0	1984.5	1984.9
7°	1982.4	1982.4	1982.8	1983.2	1982.0	1983.2	1982.8	1982.4	1982.4	1982.4	1982.8
7.5°	1980.4	1980.4	1980.8	1980.8	1980.0	1980.8	1980.8	1980.4	1980.4	1980.4	1980.8
8°	1978.0	1978.4	1978.4	1978.8	1978.0	1978.8	1978.4	1978.4	1978.0	1978.4	1978.4
8.5°	1975.6	1976.0	1976.4	1976.4	1975.6	1976.4	1976.4	1976.0	1975.6	1976.0	1976.4
9°	1973.6	1973.6	1974.0	1974.0	1973.2	1974.0	1974.0	1973.6	1973.6	1973.6	1974.0
9.5°	1970.7	1971.2	1971.2	1971.6	1970.7	1971.6	1971.2	1971.2	1970.7	1971.2	1971.2
10°	1968.3	1968.3	1968.7	1968.7	1967.9	1968.7	1968.7	1968.3	1968.3	1968.3	1968.7
10.5°	1965.5	1965.5	1965.9	1965.9	1965.1	1965.9	1965.9	1965.5	1965.5	1965.5	1965.9
11°	1962.7	1962.7	1963.1	1963.1	1961.9	1963.1	1963.1	1962.7	1962.7	1962.7	1963.1
11.5°	1959.5	1959.5	1959.9	1959.9	1959.1	1959.9	1959.9	1959.5	1959.5	1959.5	1959.9
12°	1956.6	1956.6	1956.6	1956.6	1955.8	1956.6	1956.6	1956.6	1956.6	1956.6	1956.6
12.5°	1953.4	1953.4	1953.4	1953.4	1952.6	1953.4	1953.4	1953.4	1953.4	1953.4	1953.4
13°	1950.6	1950.2	1950.6	1950.2	1949.4	1950.2	1950.6	1950.2	1950.6	1950.2	1950.6
13.5°	1947.4	1947.0	1947.0	1947.0	1945.8	1947.0	1947.0	1947.0	1947.4	1947.0	1947.0
14°	1944.2	1944.2	1943.7	1943.7	1942.5	1943.7	1943.7	1944.2	1944.2	1944.2	1943.7
14.5°	1940.9	1940.9	1940.5	1940.5	1939.3	1940.5	1940.5	1940.9	1940.9	1940.9	1940.5
15°	1938.1	1937.7	1937.3	1937.3	1936.1	1937.3	1937.3	1937.7	1938.1	1937.7	1937.3
15.5°	1935.3	1934.9	1934.5	1934.1	1933.3	1934.1	1934.5	1934.9	1935.3	1934.9	1934.5
16°	1933.3	1932.9	1932.5	1931.7	1930.9	1931.7	1932.5	1932.9	1933.3	1932.9	1932.5
16.5°	1931.7	1931.3	1930.9	1929.6	1929.2	1929.6	1930.9	1931.3	1931.7	1931.3	1930.9
17°	1930.4	1930.4	1930.0	1928.8	1928.0	1928.8	1930.0	1930.4	1930.4	1930.4	1930.0
17.5°	1930.0	1930.0	1929.2	1928.4	1928.0	1928.4	1929.2	1930.0	1930.0	1930.0	1929.2
18°	1930.0	1930.0	1929.2	1928.8	1928.0	1928.8	1929.2	1930.0	1930.0	1930.0	1929.2
18.5°	1930.0	1930.0	1929.6	1928.8	1928.0	1928.8	1929.6	1930.0	1930.0	1930.0	1929.6
19°	1930.4	1930.4	1930.0	1929.6	1928.8	1929.6	1930.0	1930.4	1930.4	1930.4	1930.0
19.5°	1930.9	1930.9	1930.4	1930.0	1929.2	1930.0	1930.4	1930.9	1930.9	1930.9	1930.4
20°	1931.3	1931.3	1930.9	1930.4	1930.0	1930.4	1930.9	1931.3	1931.3	1931.3	1930.9
20.5°	1931.7	1931.3	1931.3	1931.3	1930.4	1931.3	1931.3	1931.3	1931.7	1931.3	1931.3
21°	1931.7	1931.7	1931.7	1931.7	1931.3	1931.7	1931.7	1931.7	1931.7	1931.7	1931.7



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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°	1932.5	1932.1	1932.1	1932.5	1932.5	1932.5	1932.1	1932.1	1932.5	1932.1	1932.1
23°	1932.5	1932.1	1932.1	1932.9	1932.5	1932.9	1932.1	1932.1	1932.5	1932.1	1932.1
23.5°	1932.5	1932.1	1931.7	1932.5	1932.5	1932.5	1931.7	1932.1	1932.5	1932.1	1931.7
24°	1932.1	1931.7	1931.3	1932.5	1932.5	1932.5	1931.3	1931.7	1932.1	1931.7	1931.3
24.5°	1932.1	1931.3	1931.3	1932.5	1932.5	1932.5	1931.3	1931.3	1932.1	1931.3	1931.3
25°	1931.7	1930.9	1930.9	1932.1	1932.1	1932.1	1930.9	1930.9	1931.7	1930.9	1930.9
25.5°	1931.3	1930.4	1930.4	1932.1	1932.1	1932.1	1930.4	1930.4	1931.3	1930.4	1930.4
26°	1930.4	1930.0	1929.6	1931.7	1931.7	1931.7	1929.6	1930.0	1930.4	1930.0	1929.6
26.5°	1930.0	1929.6	1929.2	1931.3	1931.3	1931.3	1929.2	1929.6	1930.0	1929.6	1929.2
27°	1930.0	1929.2	1928.8	1930.9	1931.3	1930.9	1928.8	1929.2	1930.0	1929.2	1928.8
27.5°	1930.0	1929.6	1928.8	1930.9	1931.3	1930.9	1928.8	1929.6	1930.0	1929.6	1928.8
28°	1930.4	1929.6	1929.2	1931.3	1931.7	1931.3	1929.2	1929.6	1930.4	1929.6	1929.2
28.5°	1930.9	1930.0	1929.2	1931.7	1932.1	1931.7	1929.2	1930.0	1930.9	1930.0	1929.2
29°	1930.9	1930.0	1929.2	1932.1	1932.1	1932.1	1929.2	1930.0	1930.9	1930.0	1929.2
29.5°	1930.4	1929.6	1929.2	1931.7	1931.7	1931.7	1929.2	1929.6	1930.4	1929.6	1929.2
30°	1929.2	1928.8	1928.4	1930.9	1930.9	1930.9	1928.4	1928.8	1929.2	1928.8	1928.4
30.5°	1927.6	1927.2	1927.2	1929.6	1929.2	1929.6	1927.2	1927.2	1927.6	1927.2	1927.2
31°	1925.2	1924.8	1924.8	1927.2	1926.8	1927.2	1924.8	1924.8	1925.2	1924.8	1924.8
31.5°	1922.0	1922.0	1922.4	1924.4	1923.6	1924.4	1922.4	1922.0	1922.0	1922.0	1922.4
32°	1917.6	1918.0	1918.4	1920.4	1919.6	1920.4	1918.4	1918.0	1917.6	1918.0	1918.4
32.5°	1912.7	1913.1	1913.9	1915.5	1914.7	1915.5	1913.9	1913.1	1912.7	1913.1	1913.9
33°	1907.1	1907.5	1908.7	1909.9	1908.7	1909.9	1908.7	1907.5	1907.1	1907.5	1908.7
33.5°	1900.6	1901.0	1902.6	1903.4	1902.2	1903.4	1902.6	1901.0	1900.6	1901.0	1902.6
34°	1893.0	1894.2	1895.8	1896.2	1894.6	1896.2	1895.8	1894.2	1893.0	1894.2	1895.8
34.5°	1884.9	1886.1	1888.1	1888.1	1886.5	1888.1	1888.1	1886.1	1884.9	1886.1	1888.1
35°	1876.0	1877.3	1879.7	1879.3	1877.3	1879.3	1879.7	1877.3	1876.0	1877.3	1879.7
35.5°	1866.8	1868.4	1870.4	1870.0	1868.0	1870.0	1870.4	1868.4	1866.8	1868.4	1870.4
36°	1856.7	1858.3	1860.7	1859.9	1857.5	1859.9	1860.7	1858.3	1856.7	1858.3	1860.7
36.5°	1845.8	1847.8	1850.2	1849.0	1846.6	1849.0	1850.2	1847.8	1845.8	1847.8	1850.2
37°	1834.1	1836.1	1838.6	1837.4	1834.5	1837.4	1838.6	1836.1	1834.1	1836.1	1838.6
37.5°	1821.6	1824.1	1825.7	1824.5	1821.6	1824.5	1825.7	1824.1	1821.6	1824.1	1825.7
38°	1807.9	1810.3	1812.4	1810.8	1807.9	1810.8	1812.4	1810.3	1807.9	1810.3	1812.4
38.5°	1793.0	1795.8	1797.9	1795.8	1792.6	1795.8	1797.9	1795.8	1793.0	1795.8	1797.9
39°	1777.3	1780.5	1781.7	1779.7	1776.5	1779.7	1781.7	1780.5	1777.3	1780.5	1781.7
39.5°	1760.8	1763.6	1764.4	1762.0	1758.8	1762.0	1764.4	1763.6	1760.8	1763.6	1764.4
40°	1742.6	1745.1	1745.9	1743.4	1740.6	1743.4	1745.9	1745.1	1742.6	1745.1	1745.9
40.5°	1723.7	1725.7	1726.1	1723.7	1720.5	1723.7	1726.1	1725.7	1723.7	1725.7	1726.1
41°	1703.6	1705.2	1704.8	1702.3	1699.9	1702.3	1704.8	1705.2	1703.6	1705.2	1704.8
41.5°	1682.2	1683.4	1682.6	1680.2	1678.2	1680.2	1682.6	1683.4	1682.2	1683.4	1682.6
42°	1660.0	1660.4	1658.8	1656.8	1655.6	1656.8	1658.8	1660.4	1660.0	1660.4	1658.8
42.5°	1637.1	1636.6	1634.2	1632.6	1631.4	1632.6	1634.2	1636.6	1637.1	1636.6	1634.2
43°	1612.5	1611.3	1608.4	1607.2	1606.4	1607.2	1608.4	1611.3	1612.5	1611.3	1608.4
43.5°	1586.7	1585.1	1581.0	1580.6	1580.2	1580.6	1581.0	1585.1	1586.7	1585.1	1581.0



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**CANDELA DISTRIBUTION (continued):**

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
45°	1502.8	1499.2	1493.6	1493.6	1494.8	1493.6	1493.6	1499.2	1502.8	1499.2	1493.6
45.5°	1472.2	1468.2	1461.7	1462.5	1463.8	1462.5	1461.7	1468.2	1472.2	1468.2	1461.7
46°	1440.0	1435.9	1429.5	1430.3	1432.3	1430.3	1429.5	1435.9	1440.0	1435.9	1429.5
46.5°	1406.1	1402.5	1396.0	1396.9	1398.9	1396.9	1396.0	1402.5	1406.1	1402.5	1396.0
47°	1370.7	1367.0	1361.0	1361.8	1363.4	1361.8	1361.0	1367.0	1370.7	1367.0	1361.0
47.5°	1331.2	1327.5	1321.5	1322.7	1324.3	1322.7	1321.5	1327.5	1331.2	1327.5	1321.5
48°	1288.8	1285.6	1280.8	1282.8	1284.4	1282.8	1280.8	1285.6	1288.8	1285.6	1280.8
48.5°	1249.4	1247.7	1243.3	1244.9	1246.9	1244.9	1243.3	1247.7	1249.4	1247.7	1243.3
49°	1212.3	1211.5	1209.0	1210.3	1211.5	1210.3	1209.0	1211.5	1212.3	1211.5	1209.0
49.5°	1175.6	1175.2	1174.0	1174.8	1175.6	1174.8	1174.0	1175.2	1175.6	1175.2	1174.0
50°	1138.5	1138.1	1138.1	1139.3	1140.5	1139.3	1138.1	1138.1	1138.5	1138.1	1138.1
50.5°	1103.9	1104.3	1103.9	1104.7	1105.5	1104.7	1103.9	1104.3	1103.9	1104.3	1103.9
51°	1072.4	1072.4	1072.0	1072.8	1072.0	1072.8	1072.0	1072.4	1072.4	1072.4	1072.0
51.5°	1042.6	1042.2	1041.8	1042.6	1043.0	1042.6	1041.8	1042.2	1042.6	1042.2	1041.8
52°	1014.0	1014.0	1014.0	1015.2	1016.4	1015.2	1014.0	1014.0	1014.0	1014.0	1014.0
52.5°	987.8	988.2	987.8	989.4	990.6	989.4	987.8	988.2	987.8	988.2	987.8
53°	964.4	964.0	964.0	966.0	966.8	966.0	964.0	964.0	964.4	964.0	964.0
53.5°	942.3	942.3	942.3	943.9	944.7	943.9	942.3	942.3	942.3	942.3	942.3
54°	920.9	920.5	920.5	922.1	922.1	922.1	920.5	920.5	920.9	920.5	920.5
54.5°	897.9	897.9	897.9	899.1	899.5	899.1	897.9	897.9	897.9	897.9	897.9
55°	872.5	872.5	872.5	874.5	874.5	874.5	872.5	872.5	872.5	872.5	872.5
55.5°	843.1	843.1	843.5	846.3	845.5	846.3	843.5	843.1	843.1	843.1	843.5
56°	809.7	810.5	811.7	814.1	813.7	814.1	811.7	810.5	809.7	810.5	811.7
56.5°	775.0	775.4	777.0	779.4	779.4	779.4	777.0	775.4	775.0	775.4	777.0
57°	738.3	738.7	740.7	743.2	742.4	743.2	740.7	738.7	738.3	738.7	740.7
57.5°	700.0	700.8	702.5	705.7	705.7	705.7	702.5	700.8	700.0	700.8	702.5
58°	661.8	661.8	664.2	667.8	668.6	667.8	664.2	661.8	661.8	661.8	664.2
58.5°	621.5	622.7	624.7	629.1	630.7	629.1	624.7	622.7	621.5	622.7	624.7
59°	581.1	582.8	585.2	589.6	591.6	589.6	585.2	582.8	581.1	582.8	585.2
59.5°	540.4	542.5	545.3	550.9	553.3	550.9	545.3	542.5	540.4	542.5	545.3
60°	500.5	503.0	506.6	511.8	514.2	511.8	506.6	503.0	500.5	503.0	506.6
60.5°	460.6	463.5	468.3	473.9	476.4	473.9	468.3	463.5	460.6	463.5	468.3
61°	421.6	425.2	430.8	436.1	438.1	436.1	430.8	425.2	421.6	425.2	430.8
61.5°	384.5	387.7	394.6	399.4	401.0	399.4	394.6	387.7	384.5	387.7	394.6
62°	347.4	351.4	358.3	362.7	364.7	362.7	358.3	351.4	347.4	351.4	358.3
62.5°	311.1	315.6	323.2	327.2	330.5	327.2	323.2	315.6	311.1	315.6	323.2
63°	275.3	280.5	289.0	293.0	296.2	293.0	289.0	280.5	275.3	280.5	289.0
63.5°	241.8	246.2	255.5	259.9	263.2	259.9	255.5	246.2	241.8	246.2	255.5
64°	210.0	214.8	223.3	228.1	230.5	228.1	223.3	214.8	210.0	214.8	223.3
64.5°	179.3	184.6	192.6	197.1	199.1	197.1	192.6	184.6	179.3	184.6	192.6
65°	150.3	156.0	164.8	169.7	172.1	169.7	164.8	156.0	150.3	156.0	164.8
65.5°	124.5	130.6	137.8	143.1	146.3	143.1	137.8	130.6	124.5	130.6	137.8
66°	99.5	107.6	112.8	118.1	121.3	118.1	112.8	107.6	99.5	107.6	112.8





TEST NUMBER: P776438

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

**CANDELA DISTRIBUTION (continued):**

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
67.5°	39.9	51.6	56.0	58.0	58.8	58.0	56.0	51.6	39.9	51.6	56.0
68°	24.2	37.1	41.1	43.5	45.5	43.5	41.1	37.1	24.2	37.1	41.1
68.5°	10.5	24.6	27.0	29.4	33.5	29.4	27.0	24.6	10.5	24.6	27.0
69°	6.4	14.9	18.1	19.3	24.2	19.3	18.1	14.9	6.4	14.9	18.1
69.5°	4.4	8.9	12.1	11.3	15.3	11.3	12.1	8.9	4.4	8.9	12.1
70°	3.6	5.2	6.4	6.0	6.9	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: P776438  
CATALOG NUMBER: HCDJBL3040CSD-HCD81TRC-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: P776438

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

**CANDELA DISTRIBUTION (continued):**

	247.5°	270°	292.5°	315°	337.5°	360°
0°	1995.7	1995.7	1995.7	1995.7	1995.7	1995.7
0.5°	1996.5	1995.3	1996.5	1996.1	1995.3	1995.3
1°	1996.1	1995.3	1996.1	1995.7	1995.3	1994.9
1.5°	1995.7	1994.9	1995.7	1995.3	1994.9	1994.5
2°	1995.3	1994.5	1995.3	1994.9	1994.1	1994.1
2.5°	1994.5	1993.7	1994.5	1994.1	1993.7	1993.3
3°	1994.1	1992.9	1994.1	1993.7	1992.9	1992.9
3.5°	1992.9	1992.1	1992.9	1992.9	1992.1	1992.1
4°	1992.1	1990.9	1992.1	1991.7	1991.3	1990.9
4.5°	1990.9	1990.1	1990.9	1990.5	1990.1	1989.7
5°	1989.7	1988.9	1989.7	1989.3	1988.9	1988.5
5.5°	1988.5	1987.7	1988.5	1988.1	1987.7	1987.3
6°	1986.9	1986.1	1986.9	1986.5	1986.1	1985.7
6.5°	1985.3	1984.0	1985.3	1984.9	1984.5	1984.0
7°	1983.2	1982.0	1983.2	1982.8	1982.4	1982.4
7.5°	1980.8	1980.0	1980.8	1980.8	1980.4	1980.4
8°	1978.8	1978.0	1978.8	1978.4	1978.4	1978.0
8.5°	1976.4	1975.6	1976.4	1976.4	1976.0	1975.6
9°	1974.0	1973.2	1974.0	1974.0	1973.6	1973.6
9.5°	1971.6	1970.7	1971.6	1971.2	1971.2	1970.7
10°	1968.7	1967.9	1968.7	1968.7	1968.3	1968.3
10.5°	1965.9	1965.1	1965.9	1965.9	1965.5	1965.5
11°	1963.1	1961.9	1963.1	1963.1	1962.7	1962.7
11.5°	1959.9	1959.1	1959.9	1959.9	1959.5	1959.5
12°	1956.6	1955.8	1956.6	1956.6	1956.6	1956.6
12.5°	1953.4	1952.6	1953.4	1953.4	1953.4	1953.4
13°	1950.2	1949.4	1950.2	1950.6	1950.2	1950.6
13.5°	1947.0	1945.8	1947.0	1947.0	1947.0	1947.4
14°	1943.7	1942.5	1943.7	1943.7	1944.2	1944.2
14.5°	1940.5	1939.3	1940.5	1940.5	1940.9	1940.9
15°	1937.3	1936.1	1937.3	1937.3	1937.7	1938.1
15.5°	1934.1	1933.3	1934.1	1934.5	1934.9	1935.3
16°	1931.7	1930.9	1931.7	1932.5	1932.9	1933.3
16.5°	1929.6	1929.2	1929.6	1930.9	1931.3	1931.7
17°	1928.8	1928.0	1928.8	1930.0	1930.4	1930.4
17.5°	1928.4	1928.0	1928.4	1929.2	1930.0	1930.0
18°	1928.8	1928.0	1928.8	1929.2	1930.0	1930.0
18.5°	1928.8	1928.0	1928.8	1929.6	1930.0	1930.0
19°	1929.6	1928.8	1929.6	1930.0	1930.4	1930.4
19.5°	1930.0	1929.2	1930.0	1930.4	1930.9	1930.9
20°	1930.4	1930.0	1930.4	1930.9	1931.3	1931.3
20.5°	1931.3	1930.4	1931.3	1931.3	1931.3	1931.7
21°	1931.7	1931.3	1931.7	1931.7	1931.7	1931.7



TEST NUMBER: P776438

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

**CANDELA DISTRIBUTION (continued):**

	247.5°	270°	292.5°	315°	337.5°	360°
22.5°	1932.5	1932.5	1932.5	1932.1	1932.1	1932.5
23°	1932.9	1932.5	1932.9	1932.1	1932.1	1932.5
23.5°	1932.5	1932.5	1932.5	1931.7	1932.1	1932.5
24°	1932.5	1932.5	1932.5	1931.3	1931.7	1932.1
24.5°	1932.5	1932.5	1932.5	1931.3	1931.3	1932.1
25°	1932.1	1932.1	1932.1	1930.9	1930.9	1931.7
25.5°	1932.1	1932.1	1932.1	1930.4	1930.4	1931.3
26°	1931.7	1931.7	1931.7	1929.6	1930.0	1930.4
26.5°	1931.3	1931.3	1931.3	1929.2	1929.6	1930.0
27°	1930.9	1931.3	1930.9	1928.8	1929.2	1930.0
27.5°	1930.9	1931.3	1930.9	1928.8	1929.6	1930.0
28°	1931.3	1931.7	1931.3	1929.2	1929.6	1930.4
28.5°	1931.7	1932.1	1931.7	1929.2	1930.0	1930.9
29°	1932.1	1932.1	1932.1	1929.2	1930.0	1930.9
29.5°	1931.7	1931.7	1931.7	1929.2	1929.6	1930.4
30°	1930.9	1930.9	1930.9	1928.4	1928.8	1929.2
30.5°	1929.6	1929.2	1929.6	1927.2	1927.2	1927.6
31°	1927.2	1926.8	1927.2	1924.8	1924.8	1925.2
31.5°	1924.4	1923.6	1924.4	1922.4	1922.0	1922.0
32°	1920.4	1919.6	1920.4	1918.4	1918.0	1917.6
32.5°	1915.5	1914.7	1915.5	1913.9	1913.1	1912.7
33°	1909.9	1908.7	1909.9	1908.7	1907.5	1907.1
33.5°	1903.4	1902.2	1903.4	1902.6	1901.0	1900.6
34°	1896.2	1894.6	1896.2	1895.8	1894.2	1893.0
34.5°	1888.1	1886.5	1888.1	1888.1	1886.1	1884.9
35°	1879.3	1877.3	1879.3	1879.7	1877.3	1876.0
35.5°	1870.0	1868.0	1870.0	1870.4	1868.4	1866.8
36°	1859.9	1857.5	1859.9	1860.7	1858.3	1856.7
36.5°	1849.0	1846.6	1849.0	1850.2	1847.8	1845.8
37°	1837.4	1834.5	1837.4	1838.6	1836.1	1834.1
37.5°	1824.5	1821.6	1824.5	1825.7	1824.1	1821.6
38°	1810.8	1807.9	1810.8	1812.4	1810.3	1807.9
38.5°	1795.8	1792.6	1795.8	1797.9	1795.8	1793.0
39°	1779.7	1776.5	1779.7	1781.7	1780.5	1777.3
39.5°	1762.0	1758.8	1762.0	1764.4	1763.6	1760.8
40°	1743.4	1740.6	1743.4	1745.9	1745.1	1742.6
40.5°	1723.7	1720.5	1723.7	1726.1	1725.7	1723.7
41°	1702.3	1699.9	1702.3	1704.8	1705.2	1703.6
41.5°	1680.2	1678.2	1680.2	1682.6	1683.4	1682.2
42°	1656.8	1655.6	1656.8	1658.8	1660.4	1660.0
42.5°	1632.6	1631.4	1632.6	1634.2	1636.6	1637.1
43°	1607.2	1606.4	1607.2	1608.4	1611.3	1612.5
43.5°	1580.6	1580.2	1580.6	1581.0	1585.1	1586.7



TEST NUMBER: P776438

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

**CANDELA DISTRIBUTION (continued):**

	247.5°	270°	292.5°	315°	337.5°	360°
45°	1493.6	1494.8	1493.6	1493.6	1499.2	1502.8
45.5°	1462.5	1463.8	1462.5	1461.7	1468.2	1472.2
46°	1430.3	1432.3	1430.3	1429.5	1435.9	1440.0
46.5°	1396.9	1398.9	1396.9	1396.0	1402.5	1406.1
47°	1361.8	1363.4	1361.8	1361.0	1367.0	1370.7
47.5°	1322.7	1324.3	1322.7	1321.5	1327.5	1331.2
48°	1282.8	1284.4	1282.8	1280.8	1285.6	1288.8
48.5°	1244.9	1246.9	1244.9	1243.3	1247.7	1249.4
49°	1210.3	1211.5	1210.3	1209.0	1211.5	1212.3
49.5°	1174.8	1175.6	1174.8	1174.0	1175.2	1175.6
50°	1139.3	1140.5	1139.3	1138.1	1138.1	1138.5
50.5°	1104.7	1105.5	1104.7	1103.9	1104.3	1103.9
51°	1072.8	1072.0	1072.8	1072.0	1072.4	1072.4
51.5°	1042.6	1043.0	1042.6	1041.8	1042.2	1042.6
52°	1015.2	1016.4	1015.2	1014.0	1014.0	1014.0
52.5°	989.4	990.6	989.4	987.8	988.2	987.8
53°	966.0	966.8	966.0	964.0	964.0	964.4
53.5°	943.9	944.7	943.9	942.3	942.3	942.3
54°	922.1	922.1	922.1	920.5	920.5	920.9
54.5°	899.1	899.5	899.1	897.9	897.9	897.9
55°	874.5	874.5	874.5	872.5	872.5	872.5
55.5°	846.3	845.5	846.3	843.5	843.1	843.1
56°	814.1	813.7	814.1	811.7	810.5	809.7
56.5°	779.4	779.4	779.4	777.0	775.4	775.0
57°	743.2	742.4	743.2	740.7	738.7	738.3
57.5°	705.7	705.7	705.7	702.5	700.8	700.0
58°	667.8	668.6	667.8	664.2	661.8	661.8
58.5°	629.1	630.7	629.1	624.7	622.7	621.5
59°	589.6	591.6	589.6	585.2	582.8	581.1
59.5°	550.9	553.3	550.9	545.3	542.5	540.4
60°	511.8	514.2	511.8	506.6	503.0	500.5
60.5°	473.9	476.4	473.9	468.3	463.5	460.6
61°	436.1	438.1	436.1	430.8	425.2	421.6
61.5°	399.4	401.0	399.4	394.6	387.7	384.5
62°	362.7	364.7	362.7	358.3	351.4	347.4
62.5°	327.2	330.5	327.2	323.2	315.6	311.1
63°	293.0	296.2	293.0	289.0	280.5	275.3
63.5°	259.9	263.2	259.9	255.5	246.2	241.8
64°	228.1	230.5	228.1	223.3	214.8	210.0
64.5°	197.1	199.1	197.1	192.6	184.6	179.3
65°	169.7	172.1	169.7	164.8	156.0	150.3
65.5°	143.1	146.3	143.1	137.8	130.6	124.5
66°	118.1	121.3	118.1	112.8	107.6	99.5



TEST NUMBER: P776438

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

**CANDELA DISTRIBUTION (continued):**

	247.5°	270°	292.5°	315°	337.5°	360°
67.5°	58.0	58.8	58.0	56.0	51.6	39.9
68°	43.5	45.5	43.5	41.1	37.1	24.2
68.5°	29.4	33.5	29.4	27.0	24.6	10.5
69°	19.3	24.2	19.3	18.1	14.9	6.4
69.5°	11.3	15.3	11.3	12.1	8.9	4.4
70°	6.0	6.9	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: P776438  
CATALOG NUMBER: HCDJBL3040CSD-HCD81TRC-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



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Cooper Lighting Solutions Photometric Lab  
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Peachtree City, GA 30269

Scaled Data Report





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

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Peachtree City, GA 30269

Scaled Data Report



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Peachtree City, GA 30269

Scaled Data Report





21.5°	1932.1	1932.1	1931.7	1932.1	1931.7	1932.1	1931.7	1932.1	1932.1	1932.1	1931.7
22°	1932.5	1932.1	1932.1	1932.1	1932.1	1932.1	1932.1	1932.1	1932.5	1932.1	1932.1



44°	1559.7	1557.7	1552.8	1552.4	1552.8	1552.4	1552.8	1557.7	1559.7	1557.7	1552.8
44.5°	1531.9	1529.4	1523.8	1523.8	1524.2	1523.8	1523.8	1529.4	1531.9	1529.4	1523.8



66.5°	79.8	86.2	91.9	95.9	97.1	95.9	91.9	86.2	79.8	86.2	91.9
67°	59.6	67.3	71.7	75.8	76.6	75.8	71.7	67.3	59.6	67.3	71.7



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°	1932.1	1931.7	1932.1	1931.7	1932.1	1932.1
22°	1932.1	1932.1	1932.1	1932.1	1932.1	1932.5



44°	1552.4	1552.8	1552.4	1552.8	1557.7	1559.7
44.5°	1523.8	1524.2	1523.8	1523.8	1529.4	1531.9

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66.5°	95.9	97.1	95.9	91.9	86.2	79.8
67°	75.8	76.6	75.8	71.7	67.3	59.6

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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)